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Unveiling Water (In) Justice in Arequipa:

A Case Study of Mining Industry in Urban Space

by

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ABSTRACT

Following harsh economic and political reforms in the 1990s, Peru became a model of a neoliberal state based on natural resource extraction. Since then social and environmental conflicts between local communities and the extractive industry, particularly mining corporations, have multiplied resulting in violent clashes and a shared perception that the state is not guaranteeing people's rights. At the crossroads of the struggle between mining corporations and local communities lay different ways of living and relating to nature.

This research concerns water conflict in an urban mining setting. More precisely, this research critically analyzes water conflict in the city of Arequipa as a backdrop for revealing what water injustices look like on the ground. With one million inhabitants, Arequipa is the second largest city in Peru. Arequipa is also home to the third largest copper mine in Peru. On June 2006, social organizations and political authorities marched in protest of the copper mine's acquisition of additional water rights and its use of a tax exemption program. In the aftermath of large protests, the conflict was resolved through a multi-actor negotiation in which the mine became, through a public-private partnership, co-provider of urban water services.

Through a unique interdisciplinary theoretical approach and grounded on ethnographic methods I attempt to expose the complexity of water injustice in this particular case. My theoretical framework is based on three large fields of study, that of post-colonial studies, political ecology and critical studies of law. By mapping state-society-nature power relations, analyzing structures of oppression

and unpacking the meaning of water rights, my research unveils serious water injustices. My first research finding points to the existence of a racist and classist system that excludes poor and marginal people from water services and from accessing the city. Second, although there are different social and cultural interpretations of water rights, some interpretations hold more power and become hegemonic. Water injustice, in this regard manifests by the rise in power of the economic view of water rights. Finally, neoliberal reforms prioritizing development based on the extractive industries and the commodification of nature are conducive to water injustices.

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Research is a collective knowledge building project and this research is no exception. As I pause to think about the journey of embarking on a doctoral dissertation project, flashbacks of distinct places, fascinating conversations with people, long hours of solitude work reading and writing, and sometimes moments of despair come up to mind. Although at the end, I am the sole responsible for the limitations and shortcomings of this study; many people, places and natural beings are coresponsible for its virtues.

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CHAPTER ONE

SITUATING THE CASE OF WATER JUSTICE IN AREQUIPA

"They changed the river's name and we ceased to exist."
Municipal Agent of the El Sauco community, 2004

It was a cold night in October 2004, in the Andean city of Huamachuco in the region of La Libertad, Peru. A large group of peasants from the El Sauco community had walked a great distance to come to the city looking for the "NGO women." I was one of those women. "Please help us! Help us recover our lands, our river, our lives from the mining corporation," the municipal agent of the El Sauco community implored us (personal communication, October, 2004). A Canadian mining corporation had recently begun building a gold mine in the area. "We don't know how to negotiate with the mining corporation. They [mining representatives] came and offered us jobs, they offered us a school for our community, but have not stayed true to their promises," he continued saying (personal communication, 2004). The other two "NGO women" and I did not know what to do. We had no experience dealing with mining corporations.

A month earlier, I had spent some time conducting research on the social impacts of gold mining in the area through the non-governmental organization Asociacion Civil Labor (Civil Association Labor, Labor). I came back this time with two other women, as I had promised I would, in order to conduct participatory workshops with local communities on their environmental and social rights vis-à-vis mining projects. During the time I spent doing field research I remember walking for more than five hours towards their community on top of

the Andean mountains and observing how they lived despite adverse natural conditions. I knew what I was seeing must be very different from the ways these people had done so in the past.

During that first visit, the words of the El Sauco's municipal agent stayed with me. "They changed the name of our river. Because this river is the Sauco River… and the company named it Chuyuhual. I don't understand the company's attitude. Why did they name the river Chuyuhual?" he said to me. He went on, declaring, "when they talked about the rivers on the news, they only mentioned the Chuyuhual and Perejil Rivers. In other words, they don't include this community. It is as if this community ceased to exist!" (personal communication, September, 2004). Hearing him speak this way, this was the first time I realized that, at 4,000 meters above sea level, the river and water were crucial elements for understanding identity and life. I remember crossing the Sauco River, stopping to wash my face and hands and hearing peasants say the River looked brown. "This is not how the river used to look. They have contaminated the river and our animals are drinking this water," I overheard a local say.

Five years later, this time while living in Tempe, Arizona in the United States, a friend, a graduate student in engineering, invited me to attend a seminar about mining in Peru. "Aren't you interested in mining?" he asked. "Well, they are going to talk about a water infrastructure project that a mining corporation is doing in Arequipa, Peru" (personal communication, August, 2009). I attended the seminar. That day I felt how small the world can be. How could there be so many connections? Not only was I hearing about another mining project in my country

and how it was related to water in the city of Arequipa, I also found out the owner of that copper mine in Arequipa was a transnational corporation headquartered right around the corner in Phoenix, Arizona. I waited until the end of the presentation and I approached the speaker. He was an engineer working for the Freeport McMoran transnational corporation. I introduced myself to him, and explained my interest on mining. His eyebrows went up. "Here is my email. We should go for lunch one of these days and talk more about Peru," he said (personal communication, September, 2009). And that is how this story began.

Observing Mining, Water, and People

Conflicts over access to water and clashes between different cultural interpretations of water are increasing around the world (Barlow & Clark, 2007; Shiva, 2002). These tensions are aggravated by the effects of climate change on water resources and on whether or not neoliberal capitalism's paradigm is compatible with social and environmental justice. In recent years, water-related issues have tended to promote either hegemonic global discourses of water problems and standardized solutions to them or counter-hegemonic understanding of water coming from post-colonial countries many of them situated in Latin America. For example, with regards to normative water discourses, on October 2010 the United Nations General Assembly and Human Rights Council made the decision to pass a resolution including the right to water as a universal human right by itself. In the past, the right to water was derived from the right to an adequate standard of living contained in several existing human rights treaties. Bolivia challenged the United Nations to recognize the human right to safe and

clean drinking water and sanitation as a universal right based on the premise that human beings are essentially water (Solon, 2010). On the other hand, we find alternative notions of human-nature relations moving beyond anthropocentric and Western approaches (Gudynas, 2011; Isch, 2008; Walsh, 2010). In this regard, Ecuador's 2008 Constitution under the model of *sumac kawsay* or *buen vivir* extends rights to nature. Nature is therefore understood under this model as subject of rights not as a mere object of human control and desire.

In Latin America, where this research's case study is located, conflicts around the meaning, access, use, management, and cost of water have intensified. From the privatization of water in Cochabamba, Bolivia (Finnegan, 2002), the construction of controversial dams in the Amazon of Brazil (Goulet, 2005), to large demonstrations against extracting minerals from headwaters in Chile and Peru (Bebbington, Bury, Humphreys-Bebbington, Lingan, Munos, & Scurrah, 2008), water conflicts such as these have raised important questions regarding social and environmental justice.

Although there are many water governing models present in Latin America, they exist in a continuum between a privatized neoliberal extractive development and a state-centered extractive development model. Many Latin American countries, during the 1990s, were forced by international finance institutions to apply structural adjustment programs (SAPs) privatizing formerly public domains and facilitating the flow of private capital. From the perspective of the neoliberal extractive development model, water is seen as a commodity essential for resource extraction and economic growth. The role of the state under

this model is to facilitate the flow of capital and allow for the market to reach equilibrium through the implementation of state legislation framed under the premise of legal stability and predictability. The neoliberal state, founded under the premise of the market, loses sovereignty over its territory and gives rise to market-led governance.

On the opposite side of the spectrum, the state-centered extractive development governing model rests on the assumption the state holds complete and total sovereignty over territories including water and people. Venezuela and Bolivia are examples of countries based on the extractive industries development model that have nationalized extractive industries and applied a water management model led by the hegemonic power of the state and the President. By controlling the extraction and management of natural resources, these states are then able to redistribute rents by means of state-sponsored populist programs.

It is in this context that this research project proposes to take the case of Peru as an example of a country that has experienced harsh economic and political restructuring based on SAPs and takes an in-depth look at how water is governed and the prospects of water justice in one particular Peruvian city, Arequipa. During the early 1990s, Peru underwent neoliberal market reform, executed by Peru's then President Alberto Fujimori. In 1992, Fujimori declared emergency rule and closed Congress undermining the nation's democratic institutions, strengthening the power of the presidency, and limiting checks and balances (Arce, 2005). That same year, Fujimori reformed the mining industry by passing the General Mining Law (1992). The General Mining Law established

investor-friendly legislation, making mining and hydrocarbon projects more attractive for foreign direct investment (Glave & Kuramoto, 2002). This law enhanced Peru's global recognition as a center of mining expansion[1] (Bebbington & Bury, 2009). Fujimori also reformed the potable water and sewage service sector by creating a regulatory agency in charge of supervising water service institutions and setting water tariffs (Pasco-Font, 2000). Despite the willingness on the part of Fujimori's government to privatize water rights following the example of Chile's water law, this sector was not privatized (Del Castillo, 1994). More recently, in March 2009, under the premise of "modernizing" water legislation, the Peruvian Congress passed a new Water Resource Law, and in the year 2010, Water Regulations were stipulated. It is still uncertain how this reform will serve as a vehicle of water justice or how it will serve to prevent or solve water conflicts.

As noted by the *Finance Professionals' Post* (2011), Peru emerged as a star economic performer among emerging markets. Numerous international newspaper sources such as *The New York Times,* claim Peru's economy is one of the best performing in Latin America and least affected by the world economic crisis (Romero, 2010). According to the World Gold Council and Oxford Policy Management (2011), a good part of this extraordinary economic growth is due to extractive industry, which has generated much interest from foreign investors. However, despite the fact that Peru has seen a decline in poverty, as reported by

1 Between 1990 and 2007, Peru received US$12.35 billion in mining investments and by 2007, 70% of the country exports came from the extractive industries (Bebbington & Bury 2009)

the United Nations Development Program (UNDP, 2010), inequality remains high particularly with regards to infrastructure, gender, and ethnicity. For example, the UNDP found water access in Peru was the most unequal in the Latin American and Caribbean region (2010). In addition, according to Peru's Ombusdman Office (Defensoría del Pueblo, 2007), social and environmental conflicts have increased significantly over the last years. Many of these conflicts are triggered by the potential threat that hazardous mining residues pose to the contamination of water, air, and land[2]. In the year 2010, out of the 36 water conflicts reported by Peru's Ombusdman Office (Defensoría del Pueblo), the environmental network Red Muqui noted 28 were related to mining (Red Muqui, 2010). Research demonstrates mining expansion in Peru has created pressures on the quantity and quality of water resources[3], livelihood assets, and social relationships (Arellano, 2011; Balvin, 2008; Bebbington & Bury, 2009; Bebbington et al., 2010; Bury, 2005; Damonte, 2008; De Echave, 2011a; De Echave et al., 2009; Himley, 2010; Gil, 2009; Salas, 2008; Scurrah, 2008; Urteaga, 2011). Additionally, research on the effects of the extractive industry in Peru also point to increased conflicts among different legal, and cultural interpretations of water rights (Boelens, 2008; Boelens et al., 2010; Guevara Gil, 2010; Urteaga, 2011).

All of these circumstances make Peru a compelling country for analyzing the extent to which water justice can be achieved in an extractive industry context.

2 During 2008, Cajamarca had a total of 27 contaminated rivers, followed by Tacna with 17, Lima with 15, Cusco with 10, La Libertad with 9 and Loreto with 7. There are 850 areas of passive mining environmental (DIGESA 2009?)

3"Concessions for hard-rock minerals tend to be given in higher-altitude headwater areas. Consequently the impacts upon or risks forwater are likely to extend downstream. In some cases, concessions are given in areas that have already been granted protected status as water sources for cities and communities" (Bebbington et.al. 2010:312).

This research centers on unraveling the complexities of water conflict in the city of Arequipa, Peru in order to consider the possibility of water justice in this setting. A transnational mining corporation is situated at the epicenter of water conflict in Arequipa. The conflict worsened as the Cerro Verde Mining Corporation (also referred as SMCV or Cerro Verde), an important competitor of water resources initiated a copper production expansion project. This expansion project required additional water rights and allowed the mining company to apply for a tax deduction program. This situation led to massive social mobilizations, which ended up being resolved through a multi-actor negotiation in which SMCV became, through a public-private partnership, co-provider of potable water and key actor involved in the governance of water.

Research objectives and questions. Answering Dik Roth, Rutgerd Boelens, and Margreet Zwarteveen's (2005) call "for contextual studies and analysis of water problems and for the formulation of context-specific solutions" (p. 2), this research provides an analysis of water problems in the context of extractive-industry-led development in Arequipa. However, instead of providing solutions, this research focuses on unpacking the meaning of water justice in this setting through analyzing what water injustices look like on the ground. This research is rooted on a critical and decolonial approach, centered on narrating how water is perceived, used, governed, and contested from the point of view of different social actors in the city of Arequipa. Particular attention is placed on understanding subalterns' relation with water and how they sometimes challenge and other times abet hegemonic power in Arequipa. In doing so, the research tries

to reveal what Patricia Urteaga (2011) calls the "blind spot" (p. 19) in water ethnographies and social analysis of extractive activities created by the lack of studies on water's relation with the environment and local populations.

In the following manuscript, I present the story of how water conflict unraveled in Arequipa in light of a recent clash between Arequipa's political authorities and main social organizations with the Cerro Verde mine (SMCV), a large copper mine situated just twenty minutes away from Arequipa's city center. I analyzed the story taking three strings of consideration in mind. First, I analyzed state-society power relations in the governing of water and how these relations were altered by means of new post-colonial state policies in the extractive industries and water sectors (Chatterjee, 1993; 2004; 2011; Quijano, 2000a; 2000b). Second, I tried to make sense of how political society, the Peruvian state, and the transnational mining corporation constructed the meaning of water in its hybrid nature (Swyngedouw, 1996; 2006). While doing this, I looked at cultural constructions of water, at patterns of water use, and at the scale water was governed (Budds & Hinojosa, 2012). Finally, I mapped the meaning of water rights as a means of identifying how water was understood and contested in the city of Arequipa (Boelens et al., 2011; Boelens, 2012; Boelens & Parra, 2009; Guevara, 2010; Roth et al., 2005).

When I wrote my dissertation proposal in 2010, I had no way of predicting what my fieldwork experience would teach me about research, society-power-nature relations in Arequipa, and life. Therefore, even though that proposal served as a roadmap, it nevertheless has been revised. My research proposal served as the

initial seed from which an unknown plant has grown. Now that I look at my plant, it does not look how I imagined it would. It is unspeakably complex and full of mysteries. This is to say that the research questions I proposed have definitely served as a guiding tool during fieldwork. However, instead of being static, they have evolved through the journey of fieldwork and research analysis. Organized by topic, my questions were as follows:

State-Society Relations in the Governing of Water

- How are state and society relations configured in the governing of water in Arequipa?
- How do recent state policies in the extractive industry (mining) and water sectors shape water governance in Arequipa?

Water as Hybrid Nature and Geographies of Nature

- How is water's meaning constructed by Peru's state, political society, and the mining corporation? And, in turn, how does water's materiality influence social actors' meanings and relationships to water?
- What are social actors' scale of governance and patterns of water use?

Water Justice and Water Rights

- How do Arequipa's social actors understand water rights?
- What are the possibilities of water justice in the city of Arequipa?

Introducing Places and Protagonists

This research begins with the epistemological premise that the people of Arequipa should be recognized not as objects of study but instead as subjects of knowledge and protagonists of change (Tejada, 2010). I have also been

challenged to think about the relationship I have to nature. This reflection is unresolved in my work. As much as I tried to engage with nature as a subject, it was hard for me to detach from my Western upbringing. Unconsciously, I found I kept talking about nature and water as objects of study. Because of this, the reader will find inconsistencies in this manuscript that expose unresolved tensions. In this section I will briefly introduce the places and main protagonists of this tale. Each will be discussed in more depth in the following chapters.

Arequipa. The city of Arequipa is the capital of a southwestern region and province in Peru of the same name. As an intermediate Andean valley located at crossroads between major Andean and Pacific coastal trade routes, Arequipa became the meeting point between Spanish explorers and coastal and Andean indigenous populations. Soon after settling and founding the Spanish city of Arequipa in 1540, colonizers began dispossessing indigenous peoples of their fertile lands along the Chili River becoming landowners and agriculturalists (Chambers, 1999). Surrounded by imposing and mystical Andean volcanoes, Arequipa's elites refer to their geographical and environmental milieu as having direct effects on their rebellious, courageous, piously catholic and hard-working personality with the phrase "not in vain one is born at the foot of a volcano" (Bedregal, 2009, p. 132). Historically, Arequipeños are well-known for resisting Lima's power centralization, fighting for their political autonomy, and advocating for trade liberalization (Chambers, 1999). However, this glorious narrative also entails a strong chauvinistic construction of the self in relationship to the place that emphasizes White European tradition and despises indigenous Andean

cultures. Recent waves of Andean migrants coming from regions such as Cusco, Puno, and Moquegua are challenging Arequipeño elites' narrative and, by imposition, transforming urban, cultural, and natural processes.

Lima. The coastal city of Lima is the capital of the country of Peru and of a region with the same name. Founded as a Spanish city on 1532 by colonizers, it soon became the central axis of Peru's viceroyalty. With the construction of the Callao port, Lima became one of the most important cities in South America during Spanish colonial regime. During Peru's post-colonial period, Lima strengthened its centralized power becoming the seat of state power and the gateway for international commercial exchanges. Lima became the quintessence of modern Peru and its inhabitants were held as ideal Peruvian citizens. The farther one is from Lima, the more backward one is considered to be. And, the higher one is located in relationship to the sea, the more politically isolated and "Indian" one is (de la Cadena, 2000; Manrique, 1993; Salas, 2008). By 1980s, left-wing guerrillas born out of regional intellectual elites confronted state power by means of violence. Lima became the object of attack of these guerrillas, but also the pole of attraction of much rural Andean population who were forced to migrate because of fear, displacement, or out of necessity. Currently, with more than 8 million inhabitants (INEI, 2011), Lima stands as a transnational, centralized, overpopulated, and highly unequal mega-city.

Nature. Grandiose chains of Andean mountains stand majestically; condors fly gloriously as if delineating the horizon where the sun and mountains meet. As snow peaks melt, water runs through their cracks to their slopes, down

towards a stream, a canal, a *ojo de agua* (waterhole), a cement barrier, a pipeline, and eventually into the earth, into bodies of animals and humans, into the city, and finally into the sea and the atmosphere. At higher altitudes rain precipitates abruptly, but as it gets closer to the sea rain becomes light and quiet. Andean mountains transport flows of H2O, micro-organisms, pollutants, and nutrients through the Chili River towards the intermediate and coastal valleys. Very little is left of the countryside in the city of Arequipa as urbanization processes have transformed fertile agricultural land into commercial centers, three-storey buildings, brick houses, and asphalt roads. Industrial, mining, and agricultural activities shaped by global capital and technological processes interrelate in a heterogeneous and dynamic way with social and ecological processes in the city (Swyngedouw, 2006). In this context, marginalized and excluded people subordinated in terms of class, race, and gender struggle for a place of their own, for their own environment in the city of Arequipa.

The State. After the Proclamation of Independence from Spanish monarchy in 1821, Criollo[4] elites in Peru embarked on the project of legitimating their dominant position vis-à-vis indigenous and mestizo populations through the myth of the modern nation state. Central to this project was the success of a discourse of cultural assimilation and acculturation by which not only would indigenous and mestizos peoples learn to recognize themselves as Peruvians (de la Cadena, 2000; Hale, 1994; Smith, 1996), but would view new rulers and their governing institutions as the epitome of liberty, equality, and justice (Chambers,

4 Criollo: From the Spanish; People of Spanish descent born in Latin America during colonial times.

1999; Garcia, 2005). However, independence did not signify a transformation of the pre-existing political and economic structures established in colonial times (Thurner, 1997). Thus, according to scholar Anibal Quijano (2000a; 2000b), Peru's state is characterized by "coloniality of power" that excludes non-White peoples and discriminates on the basis of race and class. I will add that Peru's state discriminates on the basis of gender as well, in that power dwells in a masculine world. Quite to the contrary of the realization of a historicist development thinking inhabiting a linear homogenous time-space, following subaltern studies scholar Partha Chatterjee (2004) my research asserts that "power in the post-colonial world inhabits a much more dense and heterogeneous time and space" (p.7).

Political society. An idea expanded by Chatterjee (2011) in reaction to modern political theory, the notion of political society refers to state – society relations in which state subjects are not considered "citizens but populations to deliver specific benefits or services through a process of political negotiation" (p. 14). This study considers recent migrants, migrant's children, and the poor and marginalized in the city of Arequipa, who squat and circumvent state laws in order to create a place of their own as political society.

Civil society. Civil society describes the narrow domain of subjects considered as right bearers therefore citizens. Arequipa's elites, local formalized social organizations, and non-governmental organizations make up these citizens. According to Chatterjee (2004, 2011), these social actors relate to the state through the mutual recognition of legally enforceable rights. Following Chatterjee

(2004), I argue not all people in Peru are considered citizens: first, because the modern democratic nation state is a myth, second, not all social and cultural rights are respected, and finally because not all peoples are recognized as members of Peru's society. This research, due to design limitations, does not delve into analyzing civil society relationship with the state and mining corporation. However, I will refer to this domain of subjects especially in Chapter Five.

Cerro Verde Mining Corporation (also referred as SMCV or Cerro Verde mine). Twenty minutes away by car from the city of Arequipa lays the third most profitable copper open-pit mine in Peru (ITIE Peru, 2011). Due to its proximity to the city, it impacts the local economy and affects the socio-environmental conditions of more than a million people living there. SMCV has extracted copper from the Andean mountains for more than 40 years. Cerro Verde mine was the first metallurgic complex privatized following President Fujimori's neoliberal mining reform, sold in the year 1993 for 35 million dollars in cash to Cyprus Climax Metals Company (Campodonico, 1999). In 1999, SMCV was sold to Phelps Dodge Corporation. In 2007, the U.S.-based mining corporation Freeport McMoran Copper & Gold (also known as FCX) bought out bankrupt Phelps Dodge, becoming the primary shareholder of the mine. As one of the largest transnational mining corporations, FCX owns mines in North and South America as well as in Africa and Indonesia.

Relevant Scholarship and Theoretical Framework

Based on an interdisciplinary theoretical framework, this research project attempts to unpack the meaning of water justice in the context of mining

extraction in the city of Arequipa. The unpacking of water justice entails exposing the complexities of water injustices in this specific case. All through the completion of this project, I moved back and forth between deductive and inductive approaches of theory construction. As I began making sense of reality in Arequipa, I realized many of the theoretical frameworks coming from the North were insufficient to understand social reality in the South. Therefore, it became fundamental for my analysis not only to draw from epistemologies of the South (Santos, 2010), but also to contribute to building alternative knowledges to modern science (Santos, 2007). This entails placing modern science, as Boaventura de Sousa Santos, Joao Arriscado Nunes, and Maria Paula Meneses (2007) state "within the diversity of knowledges existing in contemporary societies" (p. xx). To do so, I draw on three large theoretical fields that serve as interpretive lenses to make sense of and think about the relations between nature, society, and power in Arequipa. The first field I draw from is that of subaltern theories of state-society relations. The second tradition is that of political ecology. And finally, in order to analyze the meaning of water justice, I draw on critical theories of law and justice.

State-society relations. Grounding my analyses in critical theories of Peru's nation-state formation, I question the reification of the modern nation-state concept and explain state power through a combination of structuralist and post-structuralist lenses. In order to explain Peru's state-society relations, I build on Quijano's (2000a; 2000b) theory of "coloniality of power" and on Chatterjee's (2004) subaltern conceptual field of "political society." These theories provide

starting points for challenging the universality and homogeneity of modern nation-state projects. I then turn to critical theories of political ecology, such as those proposed by geographers Eric Swyngedouw (2004) and David Harvey (2001; 2006) to explain nature-power-society relations.

I will start by explaining Quijano's (2000a; 2000b) theory of coloniality of power. Building on Marx's (1973) theory of "forces and relations of production and class conflict" and Gramsci's (1971) theory of "hegemony," Peruvian sociologist Anibal Quijano (2000a; 2000b) views Peru's state as the extension of colonial power, a form of domination which governs through racial classification and a new structure of labor control. Quijano (2000a) argues that "in no Latin American country today is it possible to find a fully nationalized society, or even a genuine nation state" (p. 567-68). Racial discrimination created layers of citizenship bundles, by which not all Peruvian were granted rights and duties. Because of their skin color and class position, indigenous populations were denied participation in the political decision-making process of the new nation state (Quijano, 2000a; 2000b). Therefore, for Quijano (2000a), democratization is what is lacking in the formation of Latin American nation states.

By paying attention to the system of racial classification and the exploitative nature of labor relations, Quijano's theory of coloniality of power serves to explain the Peruvian state's contemporary exercise of power. It also serves to criticize the homogenizing process of nation-state building, hence breaking from universalizing modern liberal thought and stressing that national identity is always partial and temporary. Yet, part of this theory's drawback is the

failure to address gender subjugation as an important construct in state-society relations. In addition to this, Quijano's conclusion of the non-existence of a fully nationalized or genuine nation state in Latin America is less helpful in that he idealizes the "political democratic process" and, in doing so, reifies the modern nation state as an ideal space for achieving political, civil, and social equality. I would argue that nowhere in the world can one find a nation state with a perfect political democratic process or where all people are treated equally or fairly. At the same time, the nation state is not the only way one could think about political organization (Esteva, 2007) but until today it has remained the most common way of thinking about modern political structures. Here I turn to Chatterjee's (2004) theory explaining the heterogeneous and dense nature of modern nation-state projects.

When referring to modern nation states, Chatterjee (2011) challenges liberal democratic theory by questioning the presence of a democratic state in the world. Chatterjee (2004) critiques the assumption that "modern nation state politics inhabits a linear, homogenous and empty time-space" (p. 7). On the one hand, Chatterjee (2004) criticizes the empty homogenous time of modernity as the utopian time of capital; in this regard, when capital "encounters an impediment, it thinks it has encountered another time –something out of pre-capital, something that belongs to pre-modern" (p. 5). In reality, according to Chatterjee (2004) "other times are not mere survivors from a pre-modern past: they are new products of the encounter with modernity itself" (p. 7). On the other hand, Chatterjee denounces the use of the ideals of universal and equal citizenship as a

mask to cover perpetuation of real inequities. In this regard, he shows that not all of the state's subjects are rights-bearing citizens but instead some are treated as populations that "have to be both looked after and controlled by various governmental agencies" (p. 38). Because of this, within politics of heterogeneity, there are not general formulas or standard solutions for all peoples at all times. Instead, "solutions are always strategic, contextual, historically specific and, inevitably, provisional" (Chatterjee, 2004, p. 22).

Key in this analysis is Chatterjee's (2004) concept of "political society." Influenced by Foucault's ideas, Chatterjee's (2004) political theory proposes to think about those who govern and those who are governed. As briefly discussed above, among those who are governed, there are those identified as "civil society" and those Chatterjee identifies as "political society." Civil society is formed by those who recognize themselves as citizens and are treated as such by the state. Political society is instead formed by those who are "tenuously, ambiguously or contextually rights-bearing citizens" (p. 38). Political society is treated by governmental agencies as marginal and under-privileged populations in the context of multiple policies of security and welfare. In this regard, governance becomes more a matter of administrative policy, a body of knowledge and a set of techniques rather than a space for democratic participation and equality.

Chatterjee's subaltern political theory illuminates the understanding of state-society relations in the city of Arequipa. At the forefront of the struggle for water in Arequipa are urban squatter associations made up of migrants and marginalized populations. Squatters not only lack access to water but are

subordinated in terms of race, class, and gender. Despite this, they are the ones who challenge power and are actors of social change. They hardly participate in politics as bearers of rights though, but as populations in need of welfare and assistance. The concept of "political society" sheds light on their often contradictory relation with the state, ranging from complicit, adaptive, collaborative, and combative (Mallon, 1994).

Another strong point of Chatterjee's subaltern political theory is that it allows us to question the universal and hegemonic presumption of modern state law. I will expand more in this regard later on when I talk about my plurilegal understanding of water rights. A drawback of Chatterjee's political theory is that it does not account for nature and the reshuffling of the state's scale. Because of this, I will now turn to theories of political ecology and critical geography.

Studying urban water: hybrid natures, politics of scale and capitalism. To make sense of social, ecological, political, and cultural processes in the city of Arequipa, I draw from geographers Eric Swyngedouw's (2004; 2006; 2010) and David Harvey's (1996; 2006) theories of nature-power relations. In his research on water problems in the city of Guayaquil in Ecuador, Swyngedouw (2004) highlights the imperative of including nature and scale into the analysis of power. Building on Donna Haraway's (1988; 1997) and Bruno Latour's (1993) cultural analyses of nature, Swyngedouw (2004) asserts that nature is a socio-physical process infused with political power and cultural meaning. He demonstrates that "the circulation of water – as a physical and social process – as well as water's crucial role in the city's socio-environmental

metabolism brings to light wider political economic, social, and ecological processes" (Swyngedouw, 2004, p. 2). Nature is not something objectively "out there" but is constantly being produced through socio-natural and socio-technical hybrid processes. Following geographer Swyngedouw's (2002; 2004; 2006) analysis of nature, this research views water as hybrid nature inserted in heterogeneous and conflicting urban processes.

With regards to concept of scale, Swyngedouw (2010) asserts that the production of nature is nested on "temporal/spatial social power relations that operate over certain scalar extent" (p. 12). According to Swyngedouw (2010), scalar configurations are arenas of socio-spatial and environmental dynamics in which power is enacted and performed. Citing geographer David Harvey (1995), Swyngedouw (2000) concludes that the globalization of capitalism is an old geographical project. New aspects worth analyzing about the globalization of capitalism today are the deterritorialisation and reterritorialisation processes of financial markets and the reliance on a monolithic and standard political economic recipe (Swyngedouw, 2000). These processes are rendering 'natural' geographical units and the scale at which nation states function less meaningful. This assertion is very important for the present case study since, to paraphrase Swyngedouw (2000), it helps explain how measures taken by Peru's state to align its social and economic policies to the 'exigencies' and 'requirements' of the new competitive world markets have reshuffled social power relations producing new spatial scales of water governance.

Inspired by Swyngedouw's work exploring nature-society relations, geographers Jessica Budds and Leonith Hinojosa (2012), link the politics of water governance with the politics of scale in the context of mining extraction in Peru. Following Budds and Hinojosa's work, I point to the existence of different inter-related and many times contesting water governance scales in the city of Arequipa. Capitalist processes are reshuffling social power relations in Peru rendering private actors, such as the mining corporation, crucial in transforming water circulation and the city's metabolism process. Water governance scales based on hydrological units such as watersheds or state administrative structures are challenged by the scale at which the transnational mining corporation manages water, which extends horizontally over space and time.

The importance of analyzing how capitalism processes interact with nature and society cannot be minimized. In this regard, I draw from David Harvey's (2006) critical theories of geography. There are two concepts of special importance, that of "accumulation by dispossession" (Harvey, 2003; 2006) and "spatio-temporal fix" (1982; 2003). David Harvey's (2003; 2006) concept of "accumulation by dispossession" is an effort to name the proliferation of forms of accumulation during the twentieth century. Springing from Marxist theory of "primitive accumulation," Harvey (2003) notes the need to include other accumulative practices such as the credit system and financial capital, the commodification or privatization of nature and public assets, the opening up of non-capitalist frontiers, and the dispossession of rights. Central to Harvey's argument is that growth generation under neoliberal capitalism has been

insufficient; therefore upper classes' wealth has not come out of growth but from strategies of accumulating by dispossession (Harvey, 2009). The idea of "accumulation by dispossession" is especially important in analyzing the effects of the privatization or commodification of nature and global environmental commons such as land, air, and water (Harvey, 2003).

Harvey (2001) employs the term "spatial fix" in a twofold sense. On the one hand, he uses it as in the metaphor "the drug addict needs a fix" to "describe capitalism's insatiable drive to resolve its inner crisis tendencies by geographical expansion and geographical restructuring" (p. 24). Harvey (2001) concludes that, in its pursuit of endless economic growth, capitalism is addicted to geographical expansion and technological change. On the other hand, he uses the term as meaning "pinning down something in a particular locus" (p. 24). In this sense,

> "capitalism needs to fix space (in immoveable structures of transport and communication nets, as well as in built environments of factories, roads, houses, water supplies, and other physical infrastructures) in order to overcome space (achieve a liberty of movement through low transport and communication costs)" (Harvey, 2001, p. 25).

The concept of spatial fix is very important when analyzing how the transnational mining corporation that owns the Cerro Verde mine in Arequipa operates. The mine is located in a specific space, it has a fixed location, but at the same time the space in which its flows of money move, its market stocks function, and its technological changes happen are located at other geographical scales. Another way of thinking about "spatial fix" in the context of mining activities is that

mining has to be built in a fixed space (or "landscape") necessary for its own functioning (mineral extraction) at a certain point in its history only to have to destroy that space (destruction of ecosystems, devalue of investments, mine closure) at a later point in order to make way for a new "spatial fix" (a new mining operation in new spaces and territories or other forms of accumulation) at a later point in its history (Harvey, 2001).

Water justice and water rights. Water justice in this research is not understood under a prescriptive or normative view of "Rightness," instead it is understood under an interpretative and descriptive approach. Thus, following Dik Roth et al.'s approach (2005), this research does not aim to tell others "what should be done." Rather, its aim is "understanding what is at stake first" (p. 4). Grounding my study in critical theories of law, I question the hegemonic power of certain discourses of water rights and legal dimensions of water. In addition to this, through the lenses of legal pluralism (Assies, 1999; Roth et al., 2005; Von Benda-Beckmann & Von Benda-Beckmann, 2003; Yrigoyen, 2004) and interlegality (Santos, 2002), I embarked on a quest to find out what legal and normative conceptions around water were present in my case study and how these different interpretations interacted with one another. Finally, the mapping of a plurilegal understanding of water rights and the analysis of power dynamics in the city of Arequipa exposes urban geographies of injustice (Harvey, 2009; Smith, 1994).

Drawing from water researchers, Roth et al, (2005) analysis of water rights, this research starts with the idea that "not all normative orders enjoy the

same degree of legitimacy and respect" (p. 6). There are legal and normative conceptions used to solve water problems that are hegemonic, in the sense that they become dominant, fit-all contexts legal regimes subordinating other approaches. Roth et al, (2005) identify three hegemonic legal water regimes. The first is made up of the traditional paradigm of state-defined and centralized water control. The second legal regime is comprised of the market-focused neoliberal paradigm. The third regime, popular nowadays, emphasizes the need for decentralized multi-users platform structures (p. 2). As water problems become increasingly framed in global terms, note Roth et al. (2005), they are given standardized solutions according to the dominant legal and normative water framework. Following Roth, Boelens, and Zwarteveen (2005), this research analyzed relations between law and power in the context of Arequipa, Peru.

This research challenges the idea that the only scale law operates in is that of the state or the market, and instead, broadens this notion by taking into account non-state and non-Western exercises of power. In this regard, law is interpreted through a legal pluralistic and interlegality approach (Boelens et al. 2010; Guevara-Gil, 2010; Santos, 2002). Legal pluralism refers to the existence of multiple legal systems within one socio-political space (Assies, 1999; Boelens et al., 2006; von Benda-Beckmann & von Benda-Beckmann, 2003; Yrigoyen, 2004). According to legal scholar Boaventura de Sousa Santos (2002), interlegality means the possibility of having different discourses and practices of law superimposed, interpenetrated, and mixed at one time and space. Theories of legal pluralism and inter-legality allow the possibility of viewing normative orders not

only as constraints or static discourses but also as tools of emancipation and dynamic construction (Roth et al., 2005; Santos, 2002).

Following Rutgerd Boelens, David Getches, and Armando Guevara (2010), water rights would be understood as comprised of four components. The first is the right to access, withdrawal, and use of water and related infrastructure. The second component concerns the formulation of water management rules, content, and mechanisms to acquire water rights and obligations. The third involves the legitimate authority to make decisions, establish rules, and enforce rights. The fourth and final component represents the discourses that challenge, impose, legitimize, or defend particular water policies or water political orders. These components point to what geographer Don Mitchell (2003) refers to as conflictive nature of rights, in that "rights [are] at once means of organizing power, means of contesting power, and means of adjudicating power" (p. 22).

This research aims to document how a variety of meanings and practices of water rights regimes coexist and intersect. At the same time, it proposes to map and analyze power relations among three main actors involved with water conflict in Arequipa; the Peruvian State, political society made-up of squatter associations, and the transnational mining corporation. Finally, as critical geographer David Harvey (2009) concludes in his book *Social Justice and the City*, environmental, economic, and social justice is directly tied to justice in the city. In this regard, the city of Arequipa will be considered not only as a space for empowerment and liberation (Lefebvre, 1974; Soja, 2009) but also a space of struggle and resistance (Merrifield & Sywngedouw, 1996).

Preliminary Research, Affiliations, and Positionality

Before entering the doctoral program, I worked for an environmental organization in Peru, Labor Civil Association (Labor). Labor is a non-profit organization committed "to incorporating environmental management in local sustainable development processes in Peru, especially in southern regions" (Labor, website). Labor strives for dialogue, conflict resolution, and citizen participation. During the time I worked for Labor in 2004, I conducted research on the social and environmental impacts of an Andean gold mine in a northern region in Peru. In addition to this, as a member of Labor, I participated in the World Bank's Extractive Industry's Review (EIR) process.

It was also at Labor where I observed first hand the problems that arise when a large-scale mining project installs itself as a next-door neighbor to peasant communities. As an urban dweller accustomed to piped and bottled water, this was also the first time I realized that rivers and water were crucial elements for understanding identity and life. The overall experience of working directly with NGOs, inter-governmental organizations, and local communities in the context of the extractive industry at Labor made me realize the conundrums of economic development and the challenges of achieving environmental justice. This reflection led me to co-author the report 'Deaf Ears: The World Bank's Extractive Industries Review' (Roca & Patron, 2005). I applied to the doctoral program in Justice Studies with the intention of strengthening my analytical, theoretical, and methodological tools in order to make sense of mining conflicts.

Through a FCX representative who I met during an environmental engineering seminar, I was allowed access to the Cerro Verde mine in Arequipa. In July 2009, I spent a week in Arequipa. During my stay, I had the opportunity to visit not only the mine and the communities living alongside the mine in the southern area of Arequipa, but also the most marginalized communities located at the northern and eastern areas of Arequipa. This brief fieldwork experience confirmed for me the importance of the case study and the great learning potential it offered as a case of urban water conflict in the context of mining projects.

In the summer of 2010, I returned to Arequipa for three weeks. After more than five years, I re-contacted Labor and shared with them my interest in studying the prospects of water justice in the city of Arequipa. Through their office in Arequipa, Labor agreed to support my research endeavors by acting as both a research base and network hub for my work. Throughout the years of field work, my relationship with Labor was professional and independent but at the same time cordial. Although I was not expected to carry out any task or work for Labor, in turn for their support, I volunteered to help in ways I could such as archiving newspaper articles, aiding with workshop logistics, and by supervising the work of subcontracted group in charge of creating a short video documentary on water problems in the city.

As a Peruvian woman and an activist, the standpoint I take in this research is situated (Haraway, 1988). This situatedness has to do with my identity, class, and political inclinations. On the one hand, my research is political in that it concentrates on analyzing power relations between political society, the Peruvian

state, and the Cerro Verde Mining Corporation from a critical perspective. On the other hand, my identity and class have a double meaning: one is the meaning I attribute them, and the other is meaning others make of my gender, class, and race. Even though I lived most of my life in Peru and I consider myself Peruvian throughout fieldwork I was confronted with the question: "Where are you from? You don't look like you are from here." This statement made me reflect on the meaning my race, gender, class and culture represents for others.

Research Design and Methodology

This research's methodology is grounded in qualitative methods and interpretative and critical analyses, and takes a critical standpoint towards positivist research. Hybrid natures, such as water and the urban process, are described in this research through socially-constructed narratives. As Swyngedouw (2004) points out, humans have a dialectic relation with nature. Water's materiality constructs society as much as society's discourses and practices construct water. In modern science there are two paradigms from which to study nature and society, that of social sciences or that of natural sciences. This research relies on nuanced approach that critiques bio-determinist and solely anthropocentric constructions of nature. I understand research as a partial systematic endeavor of interpreting, making sense of and understanding the world. Following sociologist Pierre Bourdieu (1977), I allow the practice of life to affect the concepts of theory, and I acknowledge that my own practice affects the way I come to know. I believe it is of crucial importance not only to stand back from one's practice and accept the existence of different ways people 'knowing'

the world, but also to draw from decolonial methods (Mutua & Swadener, 2004; Smith, 2005).

Qualitative methods allow me to trace different worldviews through narratives (Denzin & Lincoln, 1998). I have relied on two tools for knowing how human-nature relations are lived in the city of Arequipa. First, I have performed ethnographic fieldwork. And second, I conducted research on secondary sources, such as governmental and legal documents, NGO and private industry reports, and academic literature. Throughout fieldwork, two main topics have guided my research: nature-power relations and water rights discourses and practices. By mapping the intersections between power, nature-society relations, and water rights, I have identified what water injustices look like in this case.

Ethnography. The ethnographic component of my research consisted of participant-observations, formal and informal conversations, in-depth interviews, hanging-out with social leaders, and textual analysis. There are three places in which I have conducted fieldwork: in the Peruvian cities of Arequipa and Lima and in the United States city of Phoenix, Arizona. Of all those places, I spent the most time in Arequipa observing, talking with people, and learning from socio-natural relations. Lima is an important place since it is where laws regarding water, the economy, and political life in Peru are written. Phoenix is where the transnational mining corporation, which owns the Cerro Verde mine in Arequipa, makes decisions regarding its mines overseas. In the following paragraphs, I will briefly recount my fieldwork experiences in each of these sites.

I visited Lima in 2010 and 2011 and met with state officials, NGO representatives, water specialists, and scholars studying water and mining conflicts. I had conversations with people from various institutions that work on water issues: Peru's National Water Authority, "Water for All" (Agua para Todos) national program, the World Bank Water Modernization project, Institute for the Promotion of Water Management (Instituto de Promoción para la Gestión del Agua, IPROGA), Peruvian Center for Social Studies (Centro Peruano de Estudios Sociales, CEPES), Labor Civil Association (Labor), Group for the Analysis of Development (Grupo Análisis para el Desarrollo, GRADE), Peru's Catholic University (Pontificia Universidad Católica del Perú, PUCP), as well as with private consultants such as ConsultAndes.

In 2009, I also had the chance to participate in a three-day intensive course in Lima on "Integration and Sustainable Development in Times of Crisis" organized by the Latin American Center for Social Ecology (Centro Latinoamericano de Ecologia Social, CLAES) based in Uruguay and the Center for Environmental Sustainability (Centro para la Sostenibilidad Ambiental) of the Cayetano Heredia Perúvian University (Universidad Perúana Cayetano Heredia). This course was crucial for learning about macro-level economic and political structures, alternatives to economic-growth development and the prospects of Latin-American regional integration founded on respect for nature and cultural diversity. In addition to this course, while in Lima, I also had the opportunity to attend various forums on the rights of indigenous peoples to free, prior, and informed consent, on "Alternatives to Extractivism", and on "Latin America and

the Coloniality of Power." These forums allowed me to become acquainted with diverse organizations and to learn about other ways of knowing and making sense of life.

In Phoenix, Arizona I met a representative of the transnational mining corporation, with majority of shares in Arequipa's Cerro Verde mine, Freeport McMoran Gold & Copper (FCX) presented the case. Following the seminar, I introduced myself to the presenter and exchanged contact information. I had the chance to meet with this representative, as well as another mining officer and an intern from FCX on a couple of occasions. All these were informal meetings in which mining officers were kind enough to spend a brief time chatting about mining and corporate responsibility. I must say I was surprised and thankful to get to know and share insights with all of them. One mining officer stands out in particular due to his willingness to listen, to his open perspective about life, and to the efforts he made to build trust. Having the chance to chat with him made me realize how different we human beings are and how convinced we are of our perspective. I made the effort to step out of my standpoint and allow myself to listen to him and try to make sense of how his practice affects his life and therefore the world.

Finally, I will describe fieldwork in Arequipa. As mentioned earlier, the first time I travelled to Arequipa was in July of 2009. I returned in 2010, this time for almost a month. During that period, I was able to access Labor's archives on mining and water in Arequipa, initiate conversations with locals on the social, environmental, and political situation in Arequipa, and visit the site where the

potable water treatment plant was being built. Equipped this time with a design for a pre-dissertation research project as well as IRB approval (Protocol # 1005005155), I was able to conduct semi-structured and active interviews with leaders from grassroots organizations as well as regional and local state authorities. At last, I returned to Arequipa in 2011 and lived there from July to October. Once again, Labor supported my research endeavors by providing me an office space, allowing me access to their archives and sharing with me their knowledge. At the end of my stay, Labor backed my application to assist in a two-week long course on water justice in the city of Cusco, Perú organized by Centro Bartlome de las Casas and the Inter-Andean program Concertacion. In return for their support, I promised to return to Arequipa after the course and organize a workshop for Labor officers. On November 2011, I came back to Arequipa and shared with them documents and knowledge I had gained from the water justice perspective.

At the beginning of my 2011 fieldwork, Labor played a crucial role in helping me contact people, sharing with me key information on the topic, and allowing me to follow closely one of their projects related to saving the Chili River from contamination. I followed the work of the "Inter-institutional Committee for the Improvement of Environmental Health (CIIMSA)", and their project entitled "Save the Chili River." I helped organize various university forums discussing possible solutions to the contamination of the Chili River, spent time with the main leaders of the committee, and interacted with them on a daily

basis. I even had the chance of joining them when they traveled to Lima to visit a water sewage treatment plant.

As I began to get to know more people, the snowball effect accelerated and I had less time to go to the office. After the first month of my stay in Arequipa, I realized there was a particular group of people I had not conversed with. I wanted to get to know what life was like in the outskirts of the city, the so-called squatter neighborhoods. I began the journey of understanding the process of urbanization in Arequipa. I visited the northern part of the city (also known as the North Cone), where an entire new urban area is being created day-by-day by millions of migrants and local residents who squat as a means to acquire a home. I had the chance to speak with many residents and spent time hanging out with local leaders.

Due to fortuitous circumstances, I spent more time with one social organization in the North Cone of Arequipa, the "Front for Development and Integration of the North Cone" (FREDICON). The President of FREDICON was very supportive of my research and allowed me not only to attend their meetings and hang out with their various community leaders but also gave me full access to all their archival files. I dedicated entire days to reviewing archival documentation in their office. The documents I was able to gather ended up being crucial for the triangulation of my findings and provided me with detailed information on the process of water provision and state-society relations through the lenses of FREDICON's relationship with the state (local, regional, and national) and other social actors.

Water management and water contamination were of utmost importance during my fieldwork in Arequipa. There were two main reasons for this. On one hand, water contamination of Arequipa's main water source, the Chili River, is endemic. There is research since the early 1990s that demonstrates how much the river has been contaminated by domestic and industrial wastewater, and how this contamination in turn affects the river's ecosystem, agricultural products, and the health of local populations. On the other hand, water management was a key concern due to the implementation of a new legal framework: the new Water Resource Law (2009) and its Regulations (2010). In this regard, the Inter-American Bank and the World Bank were financing the "Water Resource Modernization Project." The Chili basin is one of six river basins chosen as pilot projects. All of these circumstances made the study of the governing of water and the meaning of water justice in Arequipa subjects of crucial importance.

The objective of the Water Resource Modernization Project was to strengthen the institutional capacity of Arequipa's water governance structure following the norms stipulated by the new Water Resource Law. At the same time, the aim was assist in the creation of the "Watershed Council," a new inter-institutional council in charge of water governance through an awareness education program. This context offered me the possibility of attending various workshops organized and facilitated by the Modernization Project team in Arequipa. Even though my research is not centered on analyzing the new Water Resource law or its implementation, the experience of talking with members of

the Modernization team and observing their work revealed to me with another perspective on state-society relations.

Other important events that took place during my time in the field were the Annual National Mining Convention (Perumin), the Alternative Forum of Indigenous Peoples against Mining, and the Mining, Dialogue, and Development Forum. I had the chance of following the organization of all of these events, attending the planning meetings of the Alternative Forum and the Mining and Dialogue Forum, and participating in all of these gatherings as an attendant. A very important component of the Alternative Forum involved taking the streets and marching in opposition to mining projects. I was able to participate in this march that gathered more than 2,000 people. Through the march, I was able to meet and speak with many people about their perspectives on the social and environmental impacts of mining. Scheduled around the same time, each one of these events represented a different ideological position towards environmental impacts of mining and on the prospect of social development and justice under contexts of mining extraction. Themes related to water access and water quality were absolutely central to discussions about state-society and mining industry relations.

Over the years, I have taken part in many conversations with people involved one way or another in water governance in the city of Arequipa and in mining projects in Peru. These conversations followed either a semi-structured, unstructured, or active interview guideline (Gubrium & Holstein, 2003). Overall, I asked people a similar set of questions regarding their views of water rights, on

the history behind the construction of the water treatment plant, on their view of the role of the mining corporation in the governing of water, and finally on their view of social and environmental justice. I have not kept track of the exact number of conversations I had with people, but I did keep track of those conversations that have been recorded. There were more than sixty conversations of this type. I knew when I had reached the saturation point, when following Ragin (1994), people started repeating critical content. Overall my qualitative methodological approach relied on "hanging out" with people, on observing, participating, attending and interacting with people on a daily basis. It is through the submersion in everyday life in Arequipa that I have come about to learn about the politics of water and what justice water means for people living in Arequipa.

Secondary sources. The second method I used to learn about water and mining in Arequipa was to look for written documents, reports, letters, newspaper articles, academic articles, geographical information system databases, and books. In this regard, I started by searching for academic literature pertaining to mining and water in Peru, if possible in Arequipa. Following this, I conducted a newspaper search looking for keywords: mining, water, and city of Arequipa. Labor was especially helpful in sharing with me their more than six-year collection of newspaper articles on the topic of water governance in Arequipa. In addition to this, through a geographer who was interning at Labor, I was able to access a comprehensive Geographical Information System (GIS) database about environmental conflicts that provided me with the essential geographical information I needed in order to draw and adapt the maps present in this

manuscript. I also looked for reports made by non-governmental organizations, the Cerro Verde Mining Corporation, the Cerro Verde Civil Association and the transnational mining corporation FCX on the topics of water, best mining practices and environmental justice in Arequipa. I was also given access to archival documents by one of Arequipa's urban squatter associations. Finally, I made an exhaustive search on the World Wide Web for documents on the mining corporations' perspective on water and social responsibility.

My literature review included a range of documents from internal sources or "documents in action" to external sources or "documents as evidence" (Prior 2003). As historian, Florencia Mallon (1994) put it, "I was able to learn the nuances and variations of power struggles through contentious documents; when confronting different kinds of sources, both written and oral; in the debates I had with others; in the local conflicts I observed" (p. 1507). Moreover, I agree with Mallon (1994) in that I believe "archives provide unique clues about power relations, and about the human, moral, and philosophical quandaries faced by the people who produced them and by the people whose shadows inhabit them, we cannot afford to do without them" (p. 1507).

Analysis: transcriptions and coding. In order to start writing about my experience living in Arequipa and following the course of water politics and the hopes of water justice, I began writing memos to make sense of what I was observing, hearing, participating in, and learning. I wrote memos based on the many field notes I had taken throughout my research. Memos inspired me to start an ethnographic field blog. Although I was not consistent in updating blog entries,

the ones I did post served as a space to store my memories, thoughts, feelings, observations, and experiences trying to comprehend water politics in the city of Arequipa. Both memos and my ethnographic notes helped me to start thinking about organization and the identification of important themes. I soon realized I needed to work on transcribing audio-taped conversations.

Conversations were recorded only when authorization was granted and for ethical and security considerations, unless permission was granted and/or content of the conversation was already public, identity of interviewees was secured (Maxwell, 2005). I assigned a pseudonym when citing direct quotes in the manuscript. Due to the large quantity of recorded conversations, I had to ask for help transcribing recorded conversations. The language used in all conversations in Peru was Spanish. Transcriptions were done by five different women, all native Spanish speakers in Lima. I followed protocols for securing people's confidentiality. I coded audio files, making it nearly impossible for the women transcribing to discern the identity of the person talking. I saved audio files on external USB drives and gave these to the women transcribing. When they finished transcribing, they returned the USB drives with all the audio files and the transcriptions as Word documents.

Once interviews were transcribed, I started the process of coding and identifying key themes by going one-by-one through each transcribed interview and field note and highlighting texts in different colors according to theme. Transcriptions, as well as other text from field notes or secondary sources were coded based on the open coding method, which combines deductive and inductive

codes (Emerson et al., 1995). I began coding for themes following my theoretical framework, such as meanings of water rights, power relations, and understandings of nature/water. As I began to do this, inductive codes emerged from the words and expressions of the people I talked with (Emerson et al., 1995). For example, there were metaphors and analogies such as the Spanish word "apoyo", or "conditioned gifts" that implied political bribery, which emerged as important themes. Another example of this was finding contradictory tales about the same event. Therefore, theory generation combined deductive and inductive approaches.

Because I was interested in hearing people's voices, it was important for me to be reflexive and sensitive to the experiences, "nuances" and "emotional aspects of existence" of the people I conversed with (Ramazanogly & Holland, 2002). Specifically, I paid attention to how different actors defined and negotiated water rights discourses. In addition to this, I also adhered to the principle of triangulating my findings by gathering the story of the same event through the use of different methods such as one-on-one conversations, written documents, and observations. The criterion for validating observations and cues generated in this research are based on transparency, communicability, and coherence (Rubin & Rubin, 1995). By transparency, I mean that I have been clear to show the steps through which I arrived at my interpretation. By communicability, I mean that my themes and constructs are understood by other researchers and by the people I conversed with in the field. And finally, with coherence I mean that my theoretical constructs fit together and allow me to tell a coherent story.

The majority of quotes cited in this manuscript have been translated from Spanish to English. Some of them did not require translations since they were in English. I personally translated all quotes being careful enough so that meaning did not get lost while at the same time aiming for comprehension. Decolonial researchers, such as Haoua Hamza (2004) and Bekisizwe Ndimande (2012), point out "the difficulties entailed in translating from one language into another while remaining true to original meanings" (2012, p. 219). They caution researchers who engage with participants in different languages "to do their best effort to capture the essence of the meaning of each word and phrase in order to avoid misinterpretations in the translation process" (Ndimande, 2012, p.220).

Because I am sensitive to people's voices, drawing from Trinh T. Minh-ha (1989), I try to practice "speaking nearby" the people who shared moments of their life with me. According to Minh-ha, "speaking nearby" refers to "a speaking that does not objectify, does not point to an object as if it is distant from the speaking subject or absent from the speaking place" (as cited in Chen, 1992, p. 87). As I translated official letters and communiqués from one of the North Cone' housing associations, I realized that in order to stay true to the linguistic meaning and contextual connotations I had to rely sometimes on literal translations. I therefore, try to speak nearby by speaking near the place, the culture, the people the text was produced.

Critical reflexivity. I believe the researcher has to recognize not only how her own historical, cultural, and professional experiences (reflexive subject) inform her interpretations of the "other's" social construction of the world, but

she must also be critical to the translation made of the "other's" discourse. I made a conscious decision to seek out the voices of subaltern communities in the city of Arequipa. Historically, these communities' ideas, hopes, and ways of knowing were neither solicited nor included. This is also due to a racialized discourse, a hegemonic discourse that depicted squatter communities in the North Cone as "problematic and unsafe" and people living there as "dirty," "lazy," "land traffickers," "thugs," and "immoral" (Tejada, 2009).

Conducting research without following ethical guidelines is extremely serious considering the impact it could have on the lives of the people and on the threat to the environment (Lincoln & Guba, 1987). Although I aimed to engage with people in the field as subjects of knowledge and approached them in a humble manner, I am sure there some who felt they had been "used" to provide data to the researcher. I am critical about this and I challenge my research in this regard. In the future, I would like to further explore the meaning of research and engage in participant-action-research (Fals Borda, 2007).

Overview of the Chapters

This research manuscript is divided into six chapters. Following this introduction, Chapter Two presents the social, ecological, political, and cultural background of water conflict in the city of Arequipa. Four sections comprise Chapter Two. The first section presents the story behind water conflict in the city of Arequipa. The second section gives a physical, biological, and territorial description of the Chili-Quilca River watershed. The third section presents an overview of main water rights found in the Chili watershed. The fourth, and last

section, gives a historical account of Peru's different water governing regimes and analyzes the present governing configuration of the Chili-Quilca basin.

Chapter Three focuses on state-society-nature relations in the city of Arequipa through the eyes of urban squatter organizations in the North Cone. This chapter is also divided into four sections. The first section presents the story of the formation of North Cone, one of the most important squatter settlements in the city of Arequipa. Following this, I present the story of an important housing association in the North Cone. This housing association has played a crucial role during the conflict with the mine. Third, I depict the history of water service in Arequipa emphasizing its impact on the North Cone. Finally, I describe and analyze the struggle for water in the North Cone and the role the state reforms.

In Chapter Four, I describe state-society-nature relations in the city of Arequipa through the eyes of the mining corporation at the local and global levels. The first section of this chapter introduces the meaning of water from the perspective of the transnational mining corporation. The second section portrays the mine's position towards the politics of scale of water governance in Arequipa. Following this, I analyze the meaning and practice of water rights from the perspective of the mining corporation. Lastly, I make the argument that the mining corporations politics of social responsibility and rent contributions are crucial for understanding the role the mine plays in water governance in Arequipa.

Chapter Five weaves together arguments presented in previous chapters in order to illustrate what water injustice looks like in Arequipa. I do this by

narrating how the conflict between Cerro Verde mine, social organizations, and political authorities was resolved. I identify at least three ways water injustice manifests in Arequipa: social exclusion, water rights in contestation, and private governance. Finally, Chapter Six presents final conclusions organized by research topics, in addition to a discussion on the contributions and future of this research.

CHAPTER TWO

THE QUILCA – CHILI RIVER BASIN: A STORY OF HYBRID NATURE, CONTESTED WATER RIGHTS AND POWER STRUGGLES

"Even now no one wants to get closer to her. Along La Marina Ave. only homeless dogs pass by. In her banks, one can see from a city bus one or another person wondering and throwing stones at her, as if wanting to throw away their laments. It is evident the clock marks ten in the morning and the Chili River remains lonely" (Sonia Ramos Baldarrago, 2008, Arequipa city dweller).

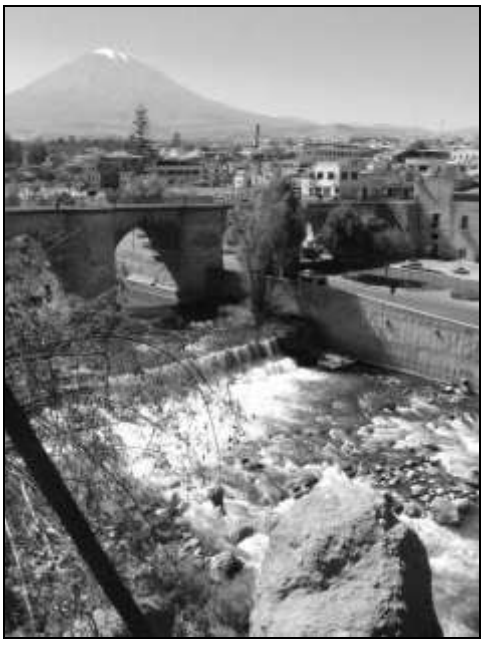

Figure 1: Chili River passing by the city of Arequipa. Photography by Author, July 2011

On June 5th, 2006 under the burning sun of the city of Arequipa, approximately 15,000 people transported themselves in buses and trucks to the nearest point of entrance of the largest copper mine in the area, the Cerro Verde Mining Corporation (Sociedad Minera Cerro Verde, SMCV). From there, representatives of local and regional governments as well as of Arequipa's most important social organizations marched three kilometers to the mine's main entrance. In approximately 34 years of private operation, this was a historic

moment in the mine's life cycle. "I remember watching how crowds of people climbed the mountains into the mine and thinking: "Oh my God, what are they doing?" recounted a mine official (personal communication, July 2010). Under the slogan of "No more contamination," "Pay your income tax" and "Revoke the Stability Agreement," civil and political society organizations united efforts for the first time and besieged SMCV. A social leader who participated in the protest reflected on the event:

> It sufficed that [large demonstration] for the mine's hair to go up! Because the marches I had organized in the past in Uchumayo were performed by five, twenty or in best case scenarios 500 people, then we allied with people from the North Cone …, but another thing was to see 15,000 people climbing the mine with Arequipa's mayors! They did not know what to do! The police was there but in a mountain terrain they cannot act, it is very difficult to control people. As a result, we signed an agreement to initiate a process of dialogue with the mediation of the Prefecture, the Ombudsman Office and the Attorney General. And that is how we made the company finance the second potable water treatment plant for Arequipa. (social leader, personal communication, June, 2010)

It was not the first time social protests targeted SMCV. The most common disputes against the mine were led by the mine's workers union. Recently, however, social upheavals had increased incrementally due to the mine's expansion project which required larger quantity of water and engendered economic and environmental claims. Locals knew very well that the main source

of water in the area, the Chili River had severe problems of water availability and was gravely contaminated by untreated sewage and industrial water (personal communications, August 2011). In 2005, for example, some of Arequipa's most representative political society organizations, such as the Defense, Integration and Development Front of the North Cone (Frente de Defensa e Integración del Cono Norte, FREDICON), and the Coordinator of Arequipa's Defense Fronts (Coordinadora de los Frentes de Defensa de Arequipa, COFREN), both composed of urban squatters from the North Cone of the city, organized marches under the theme of environmental justice. Evoking what had occurred in 2005, a member of FREDICON narrated:

> For the first march we gathered approximately 2,000 people and went to the mine in order to plant 500 trees. We planted them on the mountains surrounding the mine. SMCV proceeded to tear down the trees we planted. After learning about this, we organized a second march this time with 3,000 people and replanted the trees. We wanted to teach SMCV how to be environmentally friendly and question their environmental record. (FREDICON member, personal communication, August, 2011)

As I heard several people who participated in the marches against the mine recount what had occurred, I kept on thinking what was at stake in this new mining conflict? For the last ten years, Peru has been the site of numerous mining conflicts. What was different about this conflict?

This is not the story of a typical mining conflict involving water. Disputes regarding the use, control, or meaning of water occurred regularly for different

reasons and among different water users. In this chapter, I will make the argument that this conflict was different for three main reasons. First, because it signaled a change in Peru's state-society-nature relations, specifically those governing relations over how to use, preserve, and live in harmony with water and nature. This change directly related to a transformation of the conception of the state as the guarantor of common goods and the emergence of the extractive industry as a powerful actor in water governance. Second, because it illustrated the importance of the scalar dimension and the politics of scale in the governing of water (Budds & Hinojosa, 2012). Although official legal and institutional frameworks under the nation-state hegemony based their jurisdiction on national, regional and local scales; there were competing scales based on other boundaries that co-exist and interrelate with official water governing practices and discourses. Third, because it served as a window into mapping the different meanings and practices of water rights present in the Quilca – Chili basin. By mapping the intersection of the meaning of water rights and power relations, I aim at understanding how water justice was framed, mobilized, and contested among different social actors in the city of Arequipa.

This chapter is divided into four sections. I will weave the three arguments presented above within these sections. The first section narrates the sequence of events and presents the main protagonists that gave life to water conflict in Arequipa. The second section turns to the physical description of the Chili-Quilca River basin, its territory and biological attributes. The third section discusses the meaning and practice of water rights in the Chili watershed. The last section

problematizes the governing of water in the Quilca-Chili River basin through a historical and political scalar analysis of its present configuration. This introduction to the case is the preamble to the analysis of water injustice in Arequipa.

Mining and Water Conflict Unravels in Arequipa

Arequipa is a southern Peruvian region with semi-arid topography. Parts of its territories lay along the Pacific Ocean and the other parts make up the Southern Andean Mountain flanks. Four major river basins provide water for Arequipa, the most important of which is the Quilca - Chili River basin.[5] The majority of the rivers in Arequipa belong to the Pacific Ocean watershed. This is important to note since in Peru, rivers ending in the Pacific Ocean have less water availability, around 1.8%, compared to entire hydrological resources in the country (Ministerio del Ambiente Peru [MINAM], 2010). However, they provide for the largest amount of Peru's population, almost 70% of Peru's population inhabits territories on the Pacific watershed (MINAM, 2010). The Quilca – Chili River basin is both the primary source of drinking water and a key source of hydroelectric power. The Quilca – Chili River basin is one of Peru's most regulated basins with a large system of dams, canals and reservoirs. This hydraulic system serves to regulate water availability in the basin, needed to water large irrigation projects implemented in this basin. The city of Arequipa is the capital of a department and a province with the same name (see Figure 2). The

5 Also referred as the "Quilca-Vitor-Chili River Basin", the "Chili-Quilca Basin" or the "Chili River Basin"

province of Arequipa is the most populated with 75% of the total population of the department of Arequipa living in it.

With almost one million inhabitants, Arequipa is the second largest city in Peru after the capital city of Lima (INEI, 2007; INEI, 2011[6]). Situated at the flanks of the Misti Volcano of the southern Andean mountains and at 2,340 meters above sea level, Arequipa is a growing industrial city known for its entrepreneurial, independent, and heroic spirit. Arequipeños (as its residents are called) have a long history defending their political autonomy and cultural identity.[7] As an emerging economic center, Arequipa is a growing and prosperous city that attracts thousands of Andean migrants, mainly from Southern regions of Cusco, Puno and Moquegua, looking for employment and better living conditions. There is mounting concern with the anarchic and tumultuous urban growth of Arequipa. Numerous studies on air quality (DIRSA/MINSA, 2002; MINSA, 2001; 2003; Salas & Valdivia, 2002; Rojas, 2003; Vela Quico, 2004) and water quality (Falcon, 2009; Jimenez, Amezaga, Rotting & Guzman, 2010) point to increased levels of atmospheric and water contamination due to population growth, lack of implementation of environmental regulations and disorganized industrial growth. As summarized by a local state representative:

6 Demographic data from the 2007 National Census carried out by INEI (National Institute of Estatistics) estimate a population of 864,300 people in the city of Arequipa. In the year 2011, the INEI calculates Arequipa's population has grown to approximately 1'000,000.

7 For example, in 2002, Arequipa was the site of one of the largest regional social protests against President Toledo's decision to privatize Arequipa's public electric energy provider (Empresa de Generación Eléctrica de Arequipa, EGASA). As stated in The Economist (June 22, 2002) two factors were behind this rebellion: regional autonomy, and mistrust of privatization and foreign investors

"Arequipa can become a model sustainable city in Peru, or it can perish in the intent" (personal communication, October 2011).

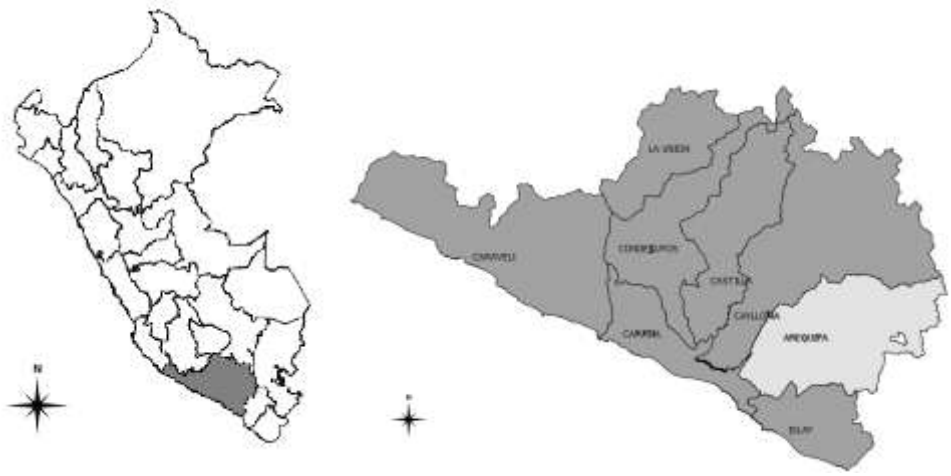

Figure 2. Peru and the Region of Arequipa. Map adapted and drawn by author.

In 2003, SMCV began expanding their activities into copper concentrate production by building a Primary Sulfides Plant. The new production facility required more fresh water than what their existing water rights allowed and what the Chili-Quilca River basin system could provide (BENTLEY, 2009). This new development served to compound Arequipa's already significant water stress problems. In addition to an increase in water demand, there was also an increase of energy demand for the city of Arequipa, as five new commercial malls were being built and population was on the rise. EGASA, Arequipa's energy provider, was also in need of more water flow to increase hydroelectric production. Finances were an obstacle though; neither the public energy company nor the state had sufficient funds for this investment. As a way to resolve this quandary, the mining corporation worked out a couple of deals with the Public Electricity Company, EGASA, to co-financed three new dams (Pillones, Bamputañe, and

Chalhuanca), for the Chili River basin hydraulic system. As a result of the first deal in 2004, the Pillones dam was built and hydraulic studies for the other two dams were conducted. SMCV helped finance 55% of the total cost of the Pillones dam as a credit line for their future electricity bill (from 2007 – 2015). In addition to this, SMCV also negotiated rights to 60% of stored water from this new dam (Supreme Decree Nº 003-2004-AG). In 2008, Cerro Verde signed another deal with EGASA under which it financed 100% the construction of the Bamputañe dam. Water rights to the Bamputañe dam have not yet been adjudicated.

The authorization of 60% of the total volume of the Pillones dam for SMCV did not advance without social consequences. Andean peasant communities living on the Chili River headwaters, and Irrigation Committees representing landowners and farmers protested this consent by marching to the mine in several occasions. In 2005, peasants from Arequipa, organized by the National Confederation of Peruvian Communities Affected by Mining (CONACAMI), mobilized in defense of water. They protested against the Pillones water allocation given to SMCV, which they argued affected highland peasant communities who relied on small-scale farming and livestock subsistence. In 2007, members of the Mutualist Association of Small Farmers from Cayma and its surroundings (AMPACA) staged another protest in the center of Arequipa, rejecting the endowment of 60% of Pillones's water to SMCV. "It is not fair for the mining company to retain more than half of the resource we need in order to irrigate our crops" claimed AMPACA's President Oscar Dueñas Lazarte (Asociación Perú, 2007).

With the Pillones dam complete, the mining corporation applied for tax deduction under the reinvestment program. The reinvestment program was one of many neoliberal policies established in the 1990s during Alberto Fujimori's presidency. SMCV was granted the reinvestment program by which national government gave a $240 million dollars credit to SMCV, by receiving no income tax for the time frame that the project expansion took to finalize. This tax break had a tangible effect on the amount of money allocated to income tax and the mining canon. The mining canon (Law No. 28077, 2003) in Peru is the name given to 50% of the mining corporations' income tax. This 50% of income tax is redistributed to regional governments and local municipalities impacted by mining extraction (see Table 1).

Table 1

Mining Canon Distribution

<table>
<tr><td rowspan="5">MINING CANON 50% of Income/Rent Tax</td><td>Percentage %</td><td colspan="2">Beneficiaries</td><td>Criterion</td></tr>
<tr><td>10%</td><td colspan="2">District Municipality where natural resource is extracted</td><td></td></tr>
<tr><td>25%</td><td colspan="2">Provincial Municipality where natural resource is extracted</td><td>Population number
Poverty rates</td></tr>
<tr><td>40%</td><td colspan="2">Departmental Municipalities where natural resource is extracted</td><td>Population number
Poverty rates</td></tr>
<tr><td>25%</td><td rowspan="2">Regional Government</td><td>80% Regional Government</td><td rowspan="2"></td></tr>
<tr><td></td><td>20% Universities</td></tr>
</table>

Because of the reinvestment program, local and regional governments received approximately $120 million dollars less for the mining canon (Diez Canseco, 2005c; Núñez, 2006). The reduction in the mining canon prompted anger and frustration by both local and regional political leaders as well as from community activists. In light of this situation, grassroots movements among the poor and most marginalized sectors in Arequipa, along with labor union federations and local and regional state authorities, organized to demand the replacement of the mining canon, an environmental agenda and a framework agreement with the SMCV. A framework agreement in this case is commonly understood to be a parallel agreement in addition to national taxes (such as income/rent tax and the mining canon) and royalties, established between the mining corporation, local and regional governments as well with local populations outlining specific procedures for mining social investment in local development.

Following the 2006 large protest that besieged the mine, the mining company was forced to negotiate a resolution to this conflict and asked for the mediation of the Peruvian government. During negotiations instead of signing a framework agreement, SMCV agreed to pay back the mining canon funds to local and regional authorities. In addition, they agreed to partner with local, regional and national authorities to design and build two water treatment plants for the city of Arequipa: a potable water and wastewater treatment plant (Agreement No.056-06-MDM). The mine agreed to pay for feasibility studies for both water plants and to finance entirely the construction of the potable water treatment plant. In

turn, state authorities pledged to build the wastewater treatment plant (Agreement No.056-06-MDM).

Four years later and after many social protests, in May 2010, SMCV finally initiated work on the new potable water treatment plant. The new potable water plant will be inaugurated in 2012. Construction work for the wastewater treatment plant, which was the responsibility of Peru's national, regional and state governments, has not yet begun; a mix of social obstacles and political unwillingness surround the failure of the governments to execute this project. Early in 2011, SMCV announced another mining expansion project that required additional water rights (FCX, 2011a). As a solution to their most recent water demand SMCV proposed, in June 2011, to finance the construction of the wastewater treatment plant provided that they were granted the right to use one cubic meter per second of treated wastewater (FCX, 2011a).

The Chili- Quilca River Basin: A Story of Hybrid Nature

Water cannot be understood without taking note of its hybrid nature and without the concept of space (Swyngedouw, 2004). The hybrid nature of water refers to an internal dialectic by which "water's materiality and social relations, the flows, forms, processes and discourses that characterize water in any given context, will reflect the material and cultural processes through which water and water issues become formed in particular ways" (Budds & Hinojosa, 2012, p. 3). Paraphrasing Budds & Hinojosa (2012) the hybrid nature of water is fundamental for understanding how the ways in which water is used and managed, are defined by different social actors who have diverse interests and give different meanings

to water (Linton, 2008; 2010; Loftus 2006; 2007; 2009; Swyngedouw, 2004). At the same time, it is also crucial for understanding how water's natural and physical characteristics also influence social and cultural interpretations of water. Swyngedouw (2003; 2006) refers to this as a constant metabolic relation between nature and human beings as the natural phenomena constantly transforming water landscape (also referred as waterscape), and in turn is transformed by social and technological components. Following Swyngedouw (2004) this research roots its analysis on the idea that Arequipa's urban water is "metabolized" water, "not only in terms of its physico-chemical characteristics, but also in terms of its social characteristics and its symbolic and cultural meanings" (p. 1). This "intermingling of things material and things symbolic" continues Swyngedouw (2004) "produces a particular socio-environmental milieu that welds nature, society and the city together in a deeply heterogeneous, conflicting and often disturbing whole" (p.10).

Another important concept in the analysis of nature-power relations is space. Water gives life to natural and social spaces, which are assigned social, cultural and political boundaries (Boelens et al., 2010; Escobar, 2001). These boundaries make up territories. Territory is a multilayered concept understood as juxtaposed layers of political-institutional, social-demographic, economic-productive, natural-environmental, and cultural relations (Alencastre, 2007). Therefore, when talking about water it is crucial to understand it as inherently connected to ecological systems both within natural geographies, such as basins, and the underground world of the subsoil and groundwater. There are of course

also non-material boundaries specifically occurring in the form of social, cultural, and political imaginaries of water. The scale of water governance is socially and politically constructed, in what is called the politics of scale (Norman & Bakker, 2009; Perreault, 2005; Swyngedouw, 1999). In that regard, each social actor could have his or her own perception of the scale in which water is governed. Needless to say that the scale in which water is governed in a particular place is not necessarily in accordance with traditional political spatial scales, such as hierarchical forms of government administration: national, regional or local (Budds & Hinojosa, 2012; Swyngedouw, 2001).

Debate surrounding the scale at which water governance should be organized, has focused on proposing the basin/watershed "as the basis of that government since it represents natural limits of the hydrographic unit" (Budds & Hinojosa, 2012, p.123). The watershed scale of water government is not extent of criticism. Scholars such as Cohen and Davidson (2011) challenge the idea of the watershed scale being a "natural" scale. Although this research also challenges the basin/watershed unit of government as the main unit of analysis, in this section I will use the basin/watershed scale as a tool to describe the physical, biological and social components of water flows, territory, infrastructure, and discourses along the Quilca – Chili River.

In this section, I describe the biophysical and socio-cultural characteristics that form part of the Quilca – Chili River basin's hybrid nature. I start by a general description of the basin's main attributes such as its extension, sub-division, hydrological, and technological characteristics. By doing this, I want to

draw attention to the ways the water landscape or waterscape of the Quilca-Chili River has been shaped by the construction of dams, irrigation projects, inter-basin transfers, processes of migration, and industrialization. Then I present two descriptive arguments that highlight the basin's main challenges. First, I describe the state of water quantity in the basin. Water availability and access to water are key indicators of the possibility of water conflict. And second, I analyze water quality and its significance on the well-being of human beings and the ecosystem.

Quilca – Chili basin characteristics. The Chili-Quilca River basin extends through an area of 13,457 km^2 and runs from the Southern Andes mountain chain at an altitude of 6,055 meters above sea level (masl) to the Pacific Ocean (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2009; Technical Report Chili Basin, 2011). In the higher parts of the basin, the river is known by the name Chili, in the middle it is referred as Vítor and Siguas, and finally at its lower ends it is known as the Quilca River. The Chili River is part of the western Peruvian basin that flows from east to west emptying into the Pacific Ocean. The Chili-Quilca basin is subdivided into three grand sub-basins: the sub-basin of the Quilca Siguas river on the west side (2,466.79 km^2), the Vítor Yura river sub-basin (4,466.78 km^2) to the center, and to the northeast the sub-basin of the Chili River (6758.56 km^2) (Technical Report Chili Basin, 2011, p. 20).

Due to its geographical location the Chili-Quilca basin is extremely arid in its lower and middle areas. It is also situated in a highly seismic region with volcanic topography (Jimenez et al., 2010). Water is considered scarce in the

southern region of Peru due to its proximity to the Atacama Desert and the effects of climate change that have increased aridity in the region (UNESCO, 2009). According to the Tyndall Center for Climate Change Research (Brooks & Adger, 2003), Peru is the third most vulnerable country to climate change. Situated in the central Andes chain, Peru houses 71% of tropical glaciers in the world. Studies indicate that Peru's glaciers are warming faster than in other parts of the world, to the extent that 30% of permanent snowfields have been lost already *(El Comercio*, 2009; *El Comercio*, 2011b). The city of Arequipa is surrounded by volcanic snow covered mountains, which are already showing signs of deglaciation.

Because of the influence of a cold Pacific current, precipitation in the coastal area is extremely limited and highly sporadic. At higher altitudes, precipitation is seasonal occurring predominantly between the months of December and April. According to a recent study conducted by Administrative Water Authority (Autoridad Administrativa del Agua, AAA), droughts in Arequipa occur every ten years (Quico Ydme, 2011, AAA 2011). Drought problems in the Chili basin have apparently been overcome with the construction of three new dams, Pillones, Chalhuanca, and Bamputañe, in an already highly regulated hydraulic system. These new dams have increased the storage capacity that will be used in a multi-year operation program to avoid water shortages during droughts (Technical Report Chili Basin, 2011).

The Quilca-Chili basin is an artificial basin in that it is regulated by a complex hydraulic infrastructure system that has changed the waterscape in the area. This hybrid biological and technical system is composed of modern and

traditional knowledge, rivers, dams, streams, transfer canals, springs, pipelines, rainfalls, snow covered peaks, valves, and reservoirs. Indeed, it is the most regulated basin in Peru with a permanent system of four reservoirs and one hydroelectric dam and with a complementary system of three more reservoirs. The upper part of the basin is located in the National Reserve of Salinas and Aguada Blanca, which filters, collects, regulates, and stores the majority of water for the basin. Since the Chili River's natural flow of water is not sufficient for the demographic and industrial needs of the city of Arequipa, water is transferred from the Colca River to the Quilca – Chili River basin. The Colca River is part of another basin, the Camana- Majes River basin. Water from the Colca River is diverted to the Quilca-Chili River basin through two transfer canals (Technical Report Chili Basin, 2011, p. 11).

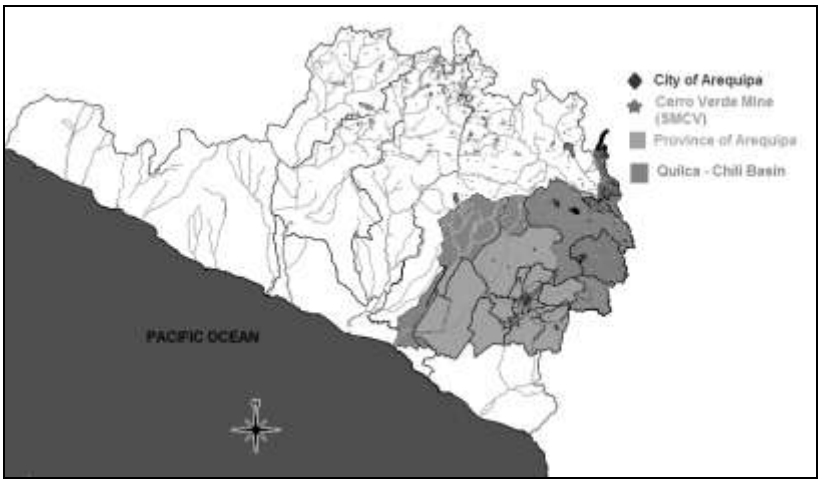

Figure 3: Regulated Hydraulic Infrastructure System. Map adapted and drawn by author.

The construction of three new dams serves to supply both the energy needs of EGASA and water needs of SMCV, among major water users. Both companies, public and private in nature, partnered to build these three dams. The

Pillones dam stores water from the Quilca-Chili River headwaters and the Camana-Majes basin through one of the inter-basin transfer canals (personal communication, 2011). The Bamputañe dam, financed entirely by the mine is located physically on the Camana-Majes basin but provides water for the Quilca-Chili basin (see Figure 4). The Chalhuanca dam, recently build, is located on the Quilca-Chili basin.

Table 2

Regulated Quilca-Chili Hydraulic Infrastructure System: Dams in Use (see Figure 4)

Dams/Reservoirs	**Basic Description**
Pillones	Located on the Pillones River in the Chalhuanca sub-basin, it is able to store 80 MMC of water coming from the Sumbay and Colca Rivers. It was built by a partnership agreement between EGASA and the SMCV mine in 2007.
Chalhuanca	Located on the Chalhuanca River, it is able to store 25 MMC of water from the Chalhuanca River. It was built by a partnership agreement between EGASA and the SMCV mine in 2009.
El Fraile	With a maximum capacity of 200 MMC of water, it regulates water resources from the high sub-basin of the Blanco River.
Aguada Blanca	Located on the Chili River downstream from the confluence of the Blanco and Sumbay Rivers. It regulates water from the Blanco and Sumbay Rivers, in addition to controlling discharges produced by the rest of the hydraulic system. The total quantity of water it can store is 42,2MMC but because of a technical difficulty it is only able to store 30,2 MMC.

Source: Technical Report Chili Basin 2011

Table 3

Regulated Quilca-Chili Hydraulic Infrastructure: Complimentary Dams (see Figure 4)

Dams/Reservoir	Basic Description
El Pañe	Located on the Negrillo River, tributary of the Colca River at an elevation of 4 580 meters above sea level. It regulates water resources of the Pañe lagoon and a humid basin of 185 km^2.
Bamputañe	Located on the Bamputañe River, tributary of the Colca River at an altitude of 4 590 meters above sea level. It regulates water resources from the Bamputañe River and a humid basin of 175 km^2.
Dique de los Españoles	Located on the upper Colca River at an altitude of 4 430 meters above sea level. It regulates the filtrations produced by the Indio Lagoon and the surplus not derived by the humid basin of the Jancolacaya of 276 km^2.
Pañe – Sumbay Canal	Derives water resources regulated by the Pañe and Bamputañe dams and non-regulated water resources from the Blanquillo, Colca and Antasalla Rivers. In its final stretch it takes the name of Zamacola Canal. It runs through North to South with a longitude of 77,5 km.
Bocatoma y Canal Antasalla	Secondary canal with 10,5 km in length, it was built to divert water from the Antasalla River to the Zamácola canal.

Source: Technical Report Chili Basin 2011

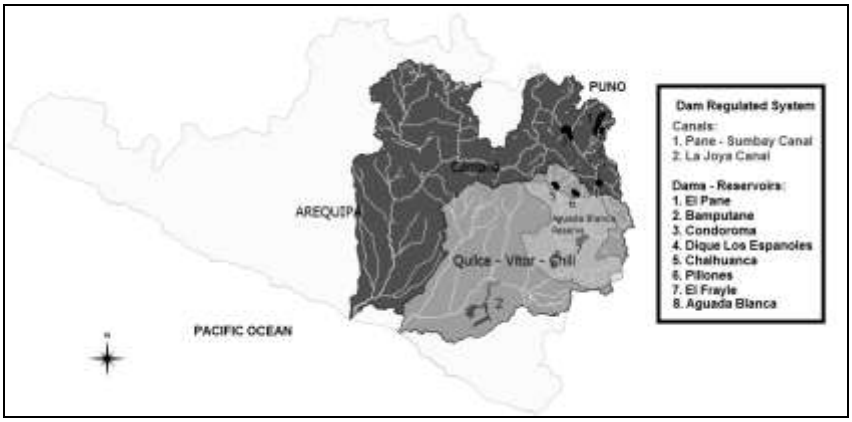

Figure 4: The Quilca – Chili Basin (including Camana-Majes Basin water transfers). Map adapted and drawn by author.

However, even with this regulated system, there is uncertainty as to whether current hydraulic infrastructure is sufficient to fulfill future population, and mining industry water demands. A recent report characterizing the Quilca-Chili River basin, the Chili Basin Technical Report (2011), found a steady increase in total water demand over time. Water demand for all uses in 2007 was 258.6 million cubic meters. As of 2010, total water demand for the Chili River is 985 million cubic meters, from which 81% is destined to agriculture, 10% to population, and 9% to mining use (only for SMCV mine, see Figure 5) (Technical Report Chili Basin, 2011). Calculations for water demand after 2010 foresees an increase of 452.2 million cubic meters, an amount that will exceed the storage and regulation capacity of the Chili River dam system (Jimenez et al., 2010). For the past ten years, an active collaborative public-private partnership plan has worked on strengthening the basin's water flow by building new dams.

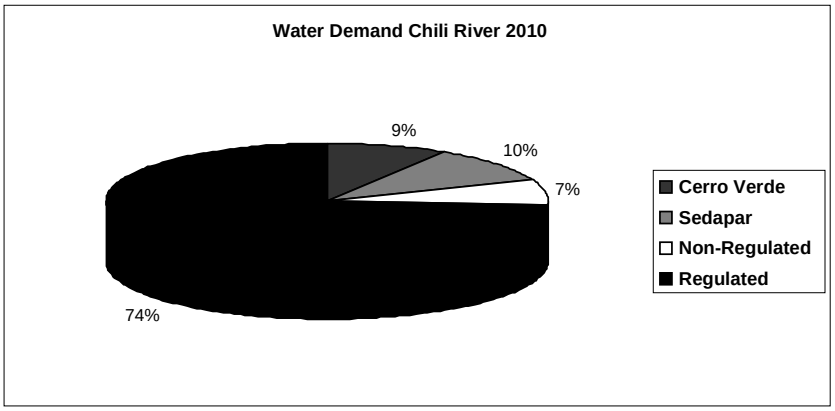

Figure 5: Water Demand Chili River in 2010. Figure elaborated by author based on Technical Report for the Chili Basin.

In addition to the regulated hydraulic system, the Quilca – Chili basin also contains at its south-eastern branch a non-regulated sub-basin. The Cerro Verde mine (SMCV) borders the non-regulated sub-basin, which is part of the mine's area of direct influence. This non-regulated sub-basin, also known as the Oriental sub-basin, consists of three micro-watersheds: Andamayo, Mollebaya, and Yarabamba. This area contains nearly all water springs of the Quilca – Chili basin (see Figure 6). By the year 1992, Chili's Irrigation District Technical Administration (ATDR) declared all surface and groundwater sources (springs, seeps and others) in this sub-basin depleted (Administrative Resolution No. 084-92-RA-SRAPE-DRA-CDR.A/ATDRCH). Due in part to population increase and ineffective water management, recently "water conflicts between agriculturalists, urban populations and SMCV have accentuated" (Non-Regulated Irrigation Committee's manager, personal communication, 2011).

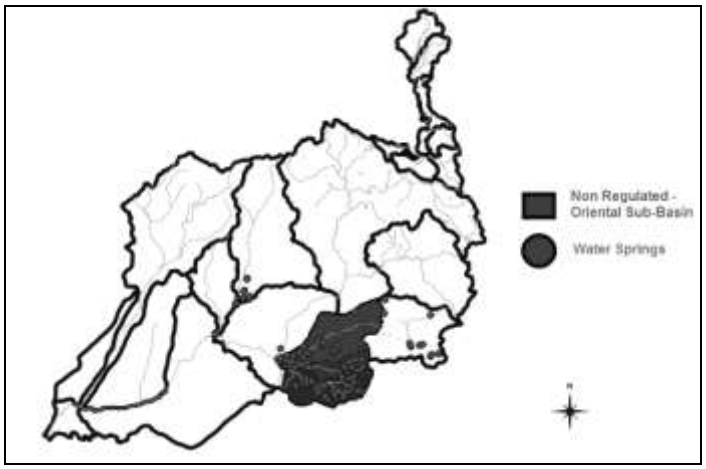

Figure 6: Non-Regulated sub-basin or Oriental sub-basin. Map adapted and drawn by author.

Mining and agriculture are the most important productive water uses in the Quilca- Chili River basin. Traditionally the countryside in Arequipa's valley was

dedicated to small-scale farming. Agriculture was and still is a very important economic activity in the area. The province of Arequipa has at least three grand irrigation systems that provide water for more than 30 thousand hectares of agricultural land. Irrigation projects, like the Old and New La Joya, are a concerted effort on the part of Peruvian national and regional government to support agriculture by turning arid lands into fertile lands through irrigation (Technical Report Chili Basin, 2011). Agricultural lands from the regulated and non-regulated basins are of good quality, although recently there have been concerns regarding water drainage due to pesticide runoff. In the higher parts of the basin, the main productive activity is the breeding of alpacas and other Andean camelids.

The other important productive activity is mining. The southern part of Peru, where the department of Arequipa is located is part of the "Southern Copper Belt" which extends through northern Chile to the southern Andean region of Peru. According to the latest mining land registry, Arequipa is the region with the most mining concessions in the country, with 42% of the entire department of Arequipa conceded to a mining company (De Echave, 2011b) (see Figure 7). A recent report found out that 17% of the Chili River watershed is now in the hands of mining concessions (Bebbington & Bury, 2007). Mining in Arequipa is represented by big transnational corporations and small, often artisanal and informal mining operations. Environmental concerns related to artisanal and informal mining operations are mounting due to weak fiscal policies and state regulatory absence.

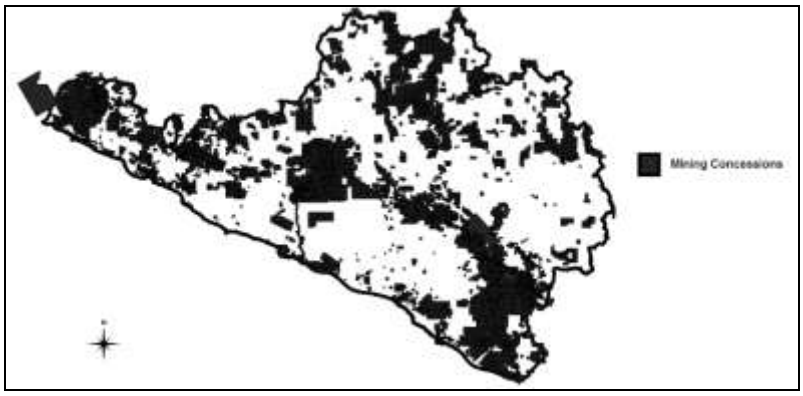

Figure 7: Mining Concessions in Arequipa. Map adapted and drawn by author.

Cerro Verde metallurgic complex is comprised of three open pit mines: Santa Rosa, Cerro Verde (in use) and in October 2007 they started extraction of Cerro Negro (South and North) (Apoyo, 2008). Before the first expansion project, Cerro Verde produced approximately 120,000 metric tons of ore per day (FCX, 2011). According to FCX's 2011 Annual Report, Cerro Verde's expansion project will increase production to 360,000 metric tons of ore per day and "provide incremental annual production of approximately 600 million pounds of copper and 15 million pounds of molybdenum beginning 2016" (FCX, 2011, p. 37). For this grand mining expansion project to develop it will need large quantities of water.

Currently and after finalizing the primary sulfides expansion, Cerro Verde holds water rights for 1,160 m3/s from the Chili River and 200 m3/s from springs on the mine's property (Knight Piesold, 2008). However, it's the second expansion project calls for an 85% increase in its water requirement, which translates to approximately 1 additional cubic meter per second.[8] (FCX, 2011)

8 http://www.fcx.com/envir/pdf/fast_facts/2011/Cerro_Verde_expansion_JULY11.pdf

Research conducted on water and the extractive industries in Peru show that the quantity of water required by mining activities for mineral production definitely affects the availability of water for other uses (Balvin, 2008; Urteaga, 2011). Increased water demands from Cerro Verde mine prompted angry remarks from other water users in the basin.

From the perception of Arequipa's population, water for household and human consumption should be prioritized. The Chili River is the main source of drinking water for the city of Arequipa. Potable water service in Arequipa is provided by the public Water Supply and Sewage Company of Arequipa, SEDAPAR, to 85% of the population (SNIP, 2008). The most important source of drinking water in Arequipa comes from the potable water treatment plant, La Tomilla, which accounts for 81% of the city's treated water. La Tomilla treats water from the Chili River (SEDAPAR, 2008). Other sources for potable water come from springs and groundwater, which together account for the remaining 19% of the city's potable water (SEDAPAR, 2008). More recently, the accelerated demographic expansion of Arequipa and the increased demand of water resources from private industry have heightened the competition for access to water (SEDAPAR, 2008). This has resulted in new communities being built with either no or limited access to potable water. Living on a part of the city with very limited access to potable water, a local resident reflected on the meaning of water for him:

> Our vision of water is that water is life, it is a basic service; therefore water for human consumption should be given precedence, we have to

> guarantee that. Second in order [of precedence] should be water for agriculture, third [water] for the generation of hydroelectric power and then, well for whatever is left. (personal communication, June 2010)

It was clear from the many conversations I had with residents of the most marginal and poor areas of Arequipa that they believed mining corporations should not take away water but instead generate more water availability in order to meet the growing urban and industrial demand (local residents, personal communications, July-October, 2011).

Communities lacking water access were situated predominantly on the northern and eastern outskirts of the city. Communities from the northern part of the city, also known as the "North Cone" such as Cerro Colorado, Alto Cayma and Yura, were particularly persistent in demanding their right to water accessibility.[9] Yura for example had the least percentage of potable water coverage in the area, with 5.1% of its total needs supplied (SNIP, 2008). Access to potable water is very unequal in Arequipa with new migrant urban communities with very limited access to this vital resource.

Water quality: sewage contamination. Water quality in the upper parts of the basin was good but it worsened exponentially as the Chili River entered the city of Arequipa (Jimenez et al., 2010). Contamination downstream the city of Arequipa was mainly caused by domestic sewage, which was dumped without treatment into the river. Industrial effluents from medium and small companies

[9] More about the struggle of social urban movements in the North Cone to access water in Chapter 3.

were also dumped without treatment. Given that only 10% of Arequipa's sewage was treated, the downstream contamination of the Chili River posed significant health concerns (SEDAPAR, 2008). Contaminated water flowed downstream to the La Joya irrigation system, polluting many hectares of agricultural lands. Reports authored by diverse state institutions (DIGESA, ATDR-Chili, Contraloria General, ARMA) as well as non-governmental organizations (Jimenez et al., 2010) highlighted the polluted state of the river. The Regional Director of Epidemiology Percy Miranda Paz stated that "Every year for each 1,000 children under poverty 55 die before they reach their first year of age due to diarrhea" (Ramos Baldárrago, 2008). Diarrhea was caused by E Coli bacteria found on the vegetables grown with contaminated water from the Chili River. Laboratory reports from the Santa Maria Catholic University (2011) in Arequipa found 190 units of fecal coli forms for each gram of onions grown downstream of the Chili River (ANA15F11.000284B). The limit of fecal coli forms in Peru for onions was a maximum of 100 units, whereas the limit for fecal coli forms units for agricultural export products was zero. Of the total area under irrigation, 96.8% of it was irrigated with contaminated water from the Chili River.

Excessive agricultural irrigation also degrades both water and soil quality (Del Castillo, 1994). Users from lower parts of Arequipa's valley are more affected by irresponsible practices from highland users (Del Castillo, 1994). In the case of Arequipa, irrigation projects built in order to expand the desert's agricultural frontier have brought with them environmental impacts on water and soil quality. According to Ponce's (2008) recent study, the La Joya and San

Isidro-La Cano irrigation projects are increasing salinity in the Vitor River. Landslides on the valley's slopes due to the destabilization caused by uncontrolled water drainage are also increasing. According to Ponce (2008), this is a very serious problem since it degrades downstream agricultural activity. The "result is the widening and silting of the affected rivers increasing the risk of floods" (Ponce, 2008, p. 2). This problem is not restricted to the Vitor valley, "as other regional irrigation projects such as the Majes-Siguas also suffers from increasing salinity and landslides" (Ponce, 2008, p. 3).

With regards to water contamination caused by SMCV, "the complex ways in which the hydrological cycle functions and the difficulty of understanding how negative impacts are generated hinder our assessment" (Urteaga, 2011, p. 13). Water and ecosystem management scholar Patricia Urteaga (2011) points to the need of considering water, soil and subsoil as elements of the ecological system, a system that cannot be fragmented. In Peru, water quality standards are permissive and regulatory institutional arrangements deficient. There is also a lack of transparency in water quality measurement data managed by the Ministry of Energy and Mines (Urteaga, 2011). For example, in 2007 when a team of researchers led by geographer Anthony Bebbington asked for complete access to water monitoring data from 1991 to 1993 conducted by Yanacocha gold mine, the Ministry of Energy and Mines as well as the mining firm itself prevented access to the data (Bebbington, 2007). This unfortunate precedent spawned a great deal of mistrust by social and environmental organization in state institutions and private mining corporations.

The idea that modern large-scale mining projects do not represent a potential damage to the environment is erroneous. For example, in the case of Cerro Verde mine, which is a zero-discharge facility, the potential environmental impacts range from tailings deposit drainage, landscape and waterscape modifications, dust pollution, groundwater contamination, and water depletion. Recently in 2012, Cerro Verde was found guilty by Arequipa's Evaluation and Environmental Monitory Agency (Organismo de Evaluación y Fiscalización Ambiental, OEFA) of soil contaminating with drainage from its oxidation plant, of air contamination, and of not properly informing about a leak in its copper concentration plant *(*Herrera, 2012; Resolution, 006-2012 OEFA-TFA).

Meaning and Practice of Water Rights in the Basin

This research makes the argument that a plurilegal understanding of water rights is fundamental to acknowledging the complexity of nature-social relations (Boelens et al., 2010). Following Rutgerd Boelens' (2011) theory of water rights,[10] I ground my analysis of water rights on the idea that multiple normative water systems interact, contradict, or reinforce each other. In this regard, there might be occasions in which two normative systems (their meanings and practices) coexist within the same space and space, functioning as an interlegal space (Santos, 2002). The meaning of water and water rights are not only politically contested but socially and culturally attributed. In this research, rights do not equate the western notion of rights, which are based on sovereignty of the nation-state, but instead I use a broader notion of rights that considers non-

10 Presentation by Rutgerd Boelens during the Water Justice Course in Cusco, November 2011

western notions not necessarily recognized by nation-states (Rajagopal, 2003; Santos, 1995; Santos & Garavito, 2005) and local appropriations of global discourses of rights (Levitt & Merry, 2009).

Following Boelens et al. (2010), water rights would be understood as conformed by four components: 1) the right to access, withdrawal and use of water and related infrastructure, 2) the formulation of water management rules, content and mechanisms to acquire water rights and obligations, 3) the legitimate authority that makes decisions, establishes rules and enforces rights, and 4) the discourses that challenge, impose, legitimize or defend particular water policies or water political orders. Water rights, according to Boelens and Hoogendam (2002) are a social relationship and an expression of power. Because of this, and paraphrasing Mitchell (2003) rights are at once, a means of organizing power since they structure power relations; a means of contesting power, since they also hold symbolic meanings and representations; and a means of adjudicating power, since they provide the guide for resolving disputes. These three roles frequently conflict.

When studying water conflicts it is imperative to map out how water rights are understood and practiced. With this in mind, I have made an effort to identify the main ways that water rights are experienced in the Quilca – Chili River basin (see Table 4). In this section, I present a general overview of some of the most representative water rights present in the basin, while in the following chapters I will examine in more detail how urban populations, the mining corporations and the state understands water rights.

Table 4

Water Rights in the Quilca – Chili River Basin

Water Rights Echelons	**WATER RIGHTS ACCORDING TO MAIN ACTORS**				
	State Authorities	**Highland Communities**	**Urban Squatter Population**	**Agricultural sector**	**Mining Sector**
Resources (water, land, territory, etc)	Nation – State ownership	Communal Good, collective ownership	Public Good	Nation – State ownership	Economic Good
Norms	State determines access and use of water in order of precedence: 1) primary use, 2) population and 3) production	Interlegality a)Local norms, Auto-determination b) State norms	Interlegality a) Norms stipulated by Sanitation and Sewage Pubic Company (SEDAPAR) and SUNASS b) Norms stipulated by urban housing associations	Interlegality a) Water right in relationship to hectares of land b) Irrigation users' organization determines norms	Interlegality a) State norms Pay for water rights b) transnational mining norms
Authority	National Water Authority (ANA) and Administrative Water Authority in the region (AAA), Local Water Authorities	Local Water Committees, ALA	SEDAPAR, SUNASS Urban Water Committees	National Board of District Irrigation Users in Peru, Local Board of Irrigation Users, Ministry of Agriculture, AAA, ALA	National Water Authority (ANA), AAA and ALA. Ministry of Energy and Mines

Discourses	Sustainable Development and Market Economy	Water as a sacred living being	Access to water as fundamental for settling and human life	Water as a basic productive resource	Economic resource

Source: Author's elaboration based on Rutgerd Boelens Analysis of Echelons of Water Rights

In the Quilca – Chili River basin there are at least five different of understanding and experiencing water rights. There is of course an official view of water rights represented by the State's legal framework. Even though this legal framework has the monopoly of power over the governing structure of water in Peru, other meanings of water rights coexist. Socially and culturally, there are different conceptualizations of water rights and different norms that enter in tension with official state law. The population from the upper part of the basin considers water as a sacred living being and as a natural resource of collective ownership. Urban residents consider it as a basic service and human right. On the other hand, the mining sector views water rights as an economic resource that should be inserted in the logic of the market. The agricultural sector views it as a basic productive resource owned by the Peruvian state (Jimenez et al., 2010). This basic analysis indicates that the discursive meanings of water rights are in contestation.

However, not only are the meanings in contestation, but also water's management, use, and control. The governing of water is also in dispute. For example, in the case of urban squatter populations, norms and authorities organized by urban water committees coexist with state norms and authorities.

Another example is that of the case of Andean highland communities living at basin's headwaters. Living at very high elevation, from 3,500 to 5,000 meters above sea level, these communities are very isolated from state's control. Consequently, state law is very seldom the water rights regime that organizes the practice of water. As shown in Table 4, interlegal practices and meanings of water are present throughout the Quilca – Chili River basin.

From the Governing of Water to Water Governance in Arequipa

This last section problematizes Peruvian state governing of water in the Quilca-Chili basin through a historical and scalar political analysis of its past and current configuration. I highlight the importance of considering the scalar dimension and the politics of scale when analyzing the governing of water. First, I present a brief description of the historical changes in water management approaches in Peru and how in turn these institutional changes impacted water management in Arequipa. I make the argument that the governing of water has changed through time from a water government to water governance approach. Second, and finally, I focus my attention on describing the present governing structure of water in the Quilca-Chili River basin. Using two different water governing arrangements currently in practice in the Quilca – Chili River basin, that of the Multisectoral Committee and the Watershed Council, I show how official institutional forms of government co-exist and interrelate with other forms of government. These different governing scales "are interlinked and interdependent and co-constitute territorial frameworks for social relations" (Brenner, 2000, p. 364).

Historical review: from water government to water governance.

Official[11] governing of water in Arequipa has changed depending on Peru's state-society relations, regulatory framework, and hydraulic bureaucracy (Ore & Rap, 2009). By hydraulic bureaucracy I understand, following Ore and Rap (2009), the formation, trajectories, culture, as well as professional and institutional networks shared by engineers and state officials employed in state water institutions. The analysis of government policies and institutional structures in the water sector, intrinsically narrates the story of state-society relations in Peru. This story is tied to a past of colonization and exclusion. What remains problematic is that Peru's post-colonial state has never had full control over all of Peru's territory, since there were many parts that remained out of the state's reach or state institutions were weak (Yashar, 2005). Nowadays, powerful non-state actors "struggle to influence the socio-territorial organization and trajectory of the [governing] process" (Brenner, 2000, p. 374). It is essential to keep in mind this observation when reading the following review of the governing of water in Peru.

The first legal framework related to water after Spanish colonial rule was the Water Code of 1902, which was strongly inspired by the 1879 Spanish Water Code (Del Castillo, 1994). At the time, this legislature benefited the system of large coastal "haciendas[12]" (Del Castillo, 1994). This legal framework opened a new form of water management that favored private water rights, recognizing that water was owned by the landlord through which lands water flowed (Del Castillo,

11 With 'Official' I mean Peruvian state's legal frameworks and institutions.

12 Word meaning "Landowners" in Spanish.

1994; Ore & Rap, 2009). Under the 'feudal private management paradigm', the water governing approach guaranteed water supply for particular users – hacendados – at the expense of other users. The Water Code was viewed as "bouquet," "a legal potpourri formed by flower or fragments of foreign law, applicable to an imaginary Peru" (Arana, 1963 as cited in Del Castillo, 1994, p. 3). When analyzing the Water Code of 1902, legal scholar Del Castillo (1994), concludes that during this time, "water for hacendados meant having an effective control over agricultural fields" (p. 3).

Between 1940 and 1950, the first hydraulic studies were conducted and the execution of hydraulic projects began. During this time in Arequipa, the La Joya Irrigation project was built, as well as the El Frayle and El Pane reservoirs, and El Pane-Sumbay transfer canal. All of these hydraulic infrastructure projects were symptomatic of a shift in paradigm, from a feudal private water management approach to a 'state-planned supply-led approach', also known as the 'state hydraulic paradigm' (Bakker, 2003) or the 'hydro-Keynesian paradigm'. This approach characterized water regime during the military government of General Juan Velasco Alvarado. The 1968 Agrarian Reform Act and the General Water Law, both enacted during Velasco Alvarado's government, established the state as the sole owner of the resource with water allocation for agriculture as the principal water use. The Irrigation District Technical Administration (ATDR) was defined as the main water authority within a determined territorial demarcation whose boundaries coincided either with those of hydraulic systems or minimally

with watersheds. In this period, water user associations, formed by peasants and farmers, were promoted (Technical Report Chili Basin, 2011).

Under the state hydraulic paradigm and with the objective of expanding the agricultural frontier, the Majes-Siguas project in Arequipa began in 1972 as a project of the Ministry of Agriculture. It was intended to develop necessary infrastructure to put 57,000 hectares of semi-arid fields under irrigation. The project was based on the regulation and utilization of water supply from the Colca and Siguas rivers. In the rest of the country, the implementation of large and medium sized hydraulic projects continued in order to expand the agricultural frontier and stimulate the agricultural sector. None of these grand infrastructure projects could have occurred without the formation of professional agricultural engineers. Their influence in water state policies and on water politics, as identified by Ore and Rap (2009) grew in the 20th century simultaneously with water state institutions, the enlargement of hydraulic infrastructure and water management centralization.

For a period of 40 years (until March 2009), the legal framework used to structure the governing of water in Peru was the 1968 General Water Law (Ore et al., 2009). It was not until the governments of Alberto Fujimori (1990-1995, 1995-2000) that neoliberal water reform initiatives based on market economy were given greater importance (Foster, 2005). Within the framework of the 1993 Constitution, and in order to boost the economy and the efficient use of natural resources, a series of laws were issued in many sectors of Peru's economy to promote privatization and foreign direct investment. It is during this time that the

extractive industries and water sectors, among others, were dramatically re-structured. In the water sector, the most important change can be found in the "Law for the Promotion of Agricultural Investments, which gives assurances to the owner who invests in extracting groundwater through their own cost and risk. This eliminated General Water Law's social considerations based on priority and rational water use" (Del Castillo, 1994, p. 5).

In 1994, the Minister of Agriculture, officers of water institutions in Peru, and economists from the World Bank submitted a new Water Law draft that sought to privatize water and create a water market. Water legislature shifted from the previous state-centered approach of water management to a user-led demand management approach, also referred to as 'market environmentalism paradigm' (Bakker, 2003). This new paradigm was also based on the idea that a new, more "modern" management approach was needed in order to administer natural resources efficiently. Modernization of water management meant more efficient water use through use of modern technologies, better administration through user-led-demand and an institutional reform focused on adopting a service orientation and improving economic and environmental performance (FAO 2003). The Water User Associations National Board, (Junta Nacional de Usuarios de los Distritos del Peru, JNUDRP) opposed this law from the start and led marches in protest. Eventually this law proposal was put aside and critiques to water market management grew (Ore & Rap, 2009).

Subsequently, Fujimori tried to privatize the water services sector but was met with great opposition. In the end, he was able to privatize one municipal

water service company and create a state institution in charge of regulating the water industry. Eventually this institutional arrangement led to concession contracts for individual service providers (Foster, 2005). Discussion on whether to privatize water supply industries continued during Alejandro Toledo's government (2001-2006) and into Alan Garcia's Presidential mandate.

Following a global trend, the integrated watershed management approach "landed" in Peru and became the model for a modern and efficient water management. It was not until the second government of Alan Garcia (2006-2011) that a new water law was finally passed on March 2009. "Alan Garcia's second government was characterized by an aggressive open market policy which had as one of its main objectives to sign a Free Trade Agreement (FTA) with the United States" (Ore & Rap, 2009, p. 55). On June 2008, the government enacted a total of 99 decree laws, in the framework of Congress's extraordinary powers in order to accelerate and facilitate the signing of the FTA with the United States. Several of these decrees addressed the water sector. These decrees introduced the need of private irrigation project operators. Tensions between water state authorities and Water User Associations National Board (JNUDRP) increased significantly. JNUDRP demanded the resignation of the Water Resource Administrator and threatened to call a new national strike. Another important actor present during the drafting of the law was the extractive sector who held an active and influential role (personal communication, Del Castillo, 2010). As a result of negotiations, "the Administrator was revoked and a new Water Resource Law was promulgated

in March 2009 in midst of confrontations and attacks between different political groups, social actors and the Government" (Ore & Rap, 2009, p. 59).

At the international level, the shift towards a market led water management approach signaled the end of water government led by the hegemonic power of the state and initiated a new paradigm of water governance in which non-state actors also hold positions of power. A recent article by Budds and Hinojosa (2012) identifies three structural shifts in the water sector that allowed for the change of state water government to the governance of water. First, a shift occurred in organizing water management from a sectoral fashion to doing it through an integrated way; this established state water authorities managing water across uses and sectors. Second, there was a shift from managing water through a political-administrative boundary towards a hydrological approach based on watersheds as the most appropriate scalar unit of water management. Finally, a shift occurs in the role played by the private sector in the provision of water services and the management of water resources. This final shift, Budds and Hinojosa (2012) argue, entails transforming the discourse of water as a public good to a discourse of water as a commodity.

In the case of Peru, the paradigm shift from a state-centered water government approach to the governance of water, was initiated during Fujimori's mandate (1990) and continued with the recently enacted Water Resource Law (2009). The governance of water in the last twenty years has been characterized by three main trends. First, hydraulic bureaucrats led a top-down governing approach making major decisions regarding water management, with no

participation of water user associations or civil society. Technocratic hydraulic knowledge backed large coastal irrigation projects at the expense of attending to water demands and protecting water sources in the Andean mountains or the Amazon jungle. Second, global economic actors such as international finance or development institutions strongly influenced water resource management in Peru favoring privatization, liberalization and modernization, many times exercising supra-national territorial water governance. Third, the re-structuring of the governing of water was based on offering incentives for private investment on the water sector. Appearing first during Fujimori's mandate, these policies multiplied across different water uses, such as agriculture and water sanitation, and were inserted in the new Water Resource Law.

Current water governance structure in the Quilca-Chili basin. In this section, I describe the present governing structure of water in the Quilca-Chili River basin. Based on a water governance approach, water in this area is governed within subnational and supranational scalar hierarchies. Even though the new Water Law emphasizes the watershed scale and the traditional national, regional, and local scale, there are other governance scales present that emphasize the importance of the urban or supranational scale. In order to show this multi-scale governance structure, I focus on two water governance structures currently present in the Quilca-Chili basin. On the one hand, there is the Multisectoral Committee, a de facto governance water institution working since 1970. On the other hand, there is the Watershed Council, an official water governance institution created by the new Water Resource Law. Rather than a traditional

hierarchical scale of analysis used by Peru's state legal structure, I propose to analyze water governance in the Chili-Quilca River basin as composed of different inter-related and super-imposed scales (Brenner, 2000).

Multisectoral Committee. Despite the existence of formal water management institutions, since 1970 a Multisectoral Committee has managed water distribution in the regulated portion of the Quilca – Chili basin (Benites, 2008). Born out of frustration with legal regulations and the crippling of the institutional water management framework, the Multisectoral Committee is a de-facto water governance scale (Balvin, 2008; Jimenez et al., 2010). This Committee does not hold legal status. It is formed by the following: a regional representative of the Ministry of Agriculture, a representative of Arequipa's Regional Government, another from the water authority in charge of the basin, representatives of each one of the four Water User Associations in the area, one from the public electric company EGASA, one from Majes's Special Project Autonomous Authority (AUTODEMA), one from the public water service company SEDAPAR, and a representative from the Cerro Verde mine (Benites, 2008).

Not all water users in the basin are represented on this Committee. Indeed, all of the Committee's members are based in the city of Arequipa, and it is from the city that they regulate water distribution for the entire basin. Peasant communities living in the upper part of the basin near headwaters and local governments have not been incorporated (Jimenez et al., 2010). In a study conducted by the project CAMINAR (Jimenez et al., 2010) that focused on

watersheds with mining influence, they found Committee disagreement exists about who should be a member or not. On the one hand, there are those within the Committee who considered that all actors in the basin with economic capacity and direct competency to make decisions on water discharge are already participating. For this group, inviting new players would determine the adoption of new functions, which they did not feel were necessary (Balvin, 2008). On the other hand, other members recognized the need to think beyond the specificity of discharging water and integrate a sustainable water management approach at the watershed level. For this matter, they suggested assuming more inclusive postures with sectors that have direct responsibility, formal or not, with the conservation of resources closely linked to the continuity of the water cycle. At the same time, this group raised the idea of taking a position and proposing actions to offset the Chili River's contamination (Jimenez et al., 2010). As it currently stands, sectors represented by the Committee do not embody an integrated watershed scale. In addition to this, the only private actor allowed to participate in the decision making process of water governance through the Committee, is the transnational mining corporation Cerro Verde.

The Committee performs two main functions. On the one hand, they are in charge of water releases. On the other hand, they invest in strengthening the basin's hydraulic infrastructure. Water releases are often influenced by EGASA, which normally is optimistic about water quantity during drought times. Because of this, "they usually are inclined to releasing more water from dams, leaving a small water reserve by the end of the year" (Technical Report Chili Basin, 2011,

p. 33). Of course, water release for EGASA is directly tied to their production of power, which in turn has the potential of affecting their profitability and efficiency. An external group of consultants hired to work on the Quilca- Chili Basin Characterization, published a Technical Report of the Chili Basin (2011) indicating that the water release calculations made each year by the Multisectoral Committee were against the nature of the existing hydraulic system. This system was designed for pluri-annual water releases, not for annual ones. They also indicate that facts have proved that the Multisectoral Committee should not be releasing higher volumes of reserved water. Consultants also found that policies for managing reservoirs/dams have varied over the years. In the past, the tendency was to release water from the reservoir El Pañe first, and then water from El Frayle, but now many times the opposite is the rule. They recommended the Multisectoral Committee maintain a consistent practice of releasing water from El Pañe dam first and then from El Frayle (Technical Report Chili Basin, 2011).

The Committee has also made important hydraulic infrastructure investments, investing in the last five years up to half a million dollars (Technical Report Chili Basin, 2011). Contributions are made according to economic capacity, in the following order: EGASA, Cerro Verde mine, and Water User Associations. In the past years, EGASA has partnered with Cerro Verde in order to construct an important number of hydraulic infrastructures, such as reservoirs, dams, and canals. The logic behind the construction of these infrastructures seems to favor an economic and productive approach. On the one hand, EGASA needs more water flow in order to produce more energy for a growing city. On the other

hand, Cerro Verde needs more water rights in order to produce more copper from their expansion projects. The combination of water demand, economic capacity, and technical expertise made possible the construction of three new reservoirs in the upper part of the basin.

Watershed Council. The new Water Resource Law modifies the scale of water governance to that of the watershed and re-structures water institutions at the national, regional and local levels. At the national level, the state institution in charge of water regulation is the National Water Authority (ANA). The ANA has presence in the country through decentralized bodies called Administrative Water Authorities (AAA). Regionally, the AAA in charge of the Quilca-Chili basin is also in charge of eight watersheds from other southern regions in Peru. The Water Administrative Authority (AAA) of Caplina – Ocoña, whose seat is in the city of Arequipa, serves the entire regions of Arequipa, Moquegua and Tacna (Technical Report Chili Basin, 2011). At the local level, Local Water Authorities (ALA) replaces former Technical Water Administrators (Chili ATDR). Another new local water institution created at the basin level is the Watershed Council or River Basin Councils. According to law, the Watershed Council of the Quilca- Chili basin should be formed by multi-stake actors representing all water users in the basin.

Since the adoption of the new water legal framework on 2009, the implementation of new policies and institutional re-structuring has occurred rather slowly. It was not until 2010 that complementary regulatory legislation (reglamento) specifying many aspects of the law were enacted. In the case of the

Quilca-Chili River basin, two challenges stood out as implementation of the law started . First, was a debate regarding the basin's boundary, or the jurisdiction of the Quilca-Chili River basin, since it received water from the Camana-Majes River basin. Second, were difficulties associated with constituting the Watershed Council in charge of coordinating water use and integration at the basin scale (Budds & Hinojosa, 2012).

The first challenge had to do with problems establishing the boundaries of a basin when it is inter-connected to another one through a transfer canal. The 2009 Water Resource Law adopts the "integrated watershed management" approach as the most natural and the most appropriate governance unit. This approach was viewed among hydraulic bureaucrats in Arequipa and Lima, as made up of an integrated, multisectoral, participatory, equitable and sustainable management of water resources (Technical Report Chili Basin, 2011). As part of one of the six pilot basins that received funding from the World Bank and Inter-American Bank for the establishment of the Watershed Council, Arequipa's regional government created the "Technical and Advocate Group for the implementation of the Watershed Council." One of the first tasks of this group was therefore to establish the boundaries of the Quilca-Chili River basin. Formed by five sub-basins, the Quilca-Chili basin also received water transfers from the Camana-Majes basin. This inter-basin transfer posed a problem for the group since they did not know whether to consider it inside the jurisdiction of the Quilca-Chili basin. After consulting with the National Water Authority, it became clear they could not incorporate another basin into their jurisdiction but they could

give it a special treatment. Although they resolved this situation by creating a "special management area," this difficulty questions the extent to which a watershed represents "natural" boundaries.

Literature on the matter increasingly critiques both the concept and effectiveness of the watershed scale (Budds & Hinojosa 2012; Cohen & Davidson, 2011; Griffin, 1999; Norman & Bakker, 2009). One of the points made by Budds & Hinojosa (2012) is that "watersheds are socially shaped through the historic trajectories of human manipulation of water flows and drainage basins, hydraulic infrastructure, economic development, etc, rendering watershed boundaries infinitely porous" (p. 7).

The second challenge, or the process of constituting the Quilca-Chili Watershed Council, has not been easy. As a first step towards the establishment of the Council, Arequipa's regional government created in 2010 the Technical and Advocate Group for the conformation of the Quilca-Chili Watershed Council. At the beginning only representatives of five institutions made up this group, that of the Regional Government, Agricultural Users, Population Users, Mining Users and AUTODEMA. Many water users felt marginalized upon discovering they were not part of the group. One of these groups, users of the Non-Regulated portion of the Quilca-Chili basin claimed their right to participate (state representative, personal communication 2011; non-regulated water user, personal communication 2011). "They invited practically the same people that formed the Multisectoral Committee, marginalizing again water users from the non-regulated basin and others," said a representative of the non-regulated basin (personal

communication 2011). A year later, Arequipa's Regional Government extended the group's composition to 13 members. Following this, all the work that the group had been doing had to be re-evaluated in face of the advice of new members.

Subsequently, tensions between members were exacerbated as they disagreed on methods for constituting the Council, on how the group's cost would be taken care of, what the basin's main problems were and how to solve them. However, time and funding limitations forced them to move forward and elect members of the Watershed Council. A repeated phrase at this time was: "There is no more time to discuss issues. We have to move forward because if we don't, we lose funding from the World Bank" (field observation 2011). Under these circumstances during August to November 2011, elections for Council representatives proceeded. Election atmosphere was rather somber and participation was low, which made elections less competitive and more like an agreement (field observation 2011). Among the different sectors represented in the Council, there was one seat for a representative from water user associations with non-agrarian purposes, which include a heterogeneous mix of local population, industry, and mining water users. Very few attended elections for a representative from this sector. The Cerro Verde mine officer offered to become the sector's Watershed Council representative, and was immediately elected without opposition (personal communication 2011).

Governance problems. As presented in this section, Peru's institutional framework for water governance is extremely complex and many times chaotic.

In the case of the Quilca-Chili basin in Arequipa, formal, de-facto and non-formal water governance institutions coexist. Each one of these institutions has a different governance scale. On the one hand, the Watershed Council considered the watershed as the main unit of governance. Framed under the 2009 Water Resource Law, the Council formed by water user organizations maked important decisions at the basin level but was governed by local, inter-regional and national water institutions. On the other hand, governance scale for the Multisectoral Committee was not limited to the Quilca-Chili watershed since there was always the option of inter-basin transfers and use of water sources beyond the basin. Not holding legal status, this Committee, formed by a reduced group of water users mainly from the city of Arequipa, has for the past 40 years governed water supply in the basin by making important hydraulic investments and by deciding water distribution from the regulated hydraulic system. Given the recent formation of the Quilca-Chili Watershed Council, the future of the Multisectoral Committee and the role it will play in the future remains uncertain.

As it currently stands the prevailing model of water management in the Quilca-Chili basin reinforces the separate treatment of water supply and demand. This problem is evident by the lack of policies aimed at decontaminating surface and groundwater. To this day, the Multisectoral Committee makes decisions about water distribution and hydraulic investment in the basin. This can generate claims from any water user affected by their decisions, which could result in negative consequences for official water governance institutions (Technical Report Chili Basin, 2011). As a matter of fact, there are already a number of complaints and

conflicts due to the way the Committee handled the construction and the function of three new dams. “This brings water distribution problems and conflicts between users with and without water license” (Technical Report Chili Basin, 2011, p. 43).

In addition to the juxtaposed water governance scales and institutions currently present in the basin, with the official water governance scale there was little integration of the basin’s administrative water jurisdiction. This resulted in controversy and a lack of coordination. Currently the basin is divided into two jurisdictions. On the one hand, the entire area of the Quilca-Chili basin is in the hands of the ALA from the Quilca-Chili basin, except for the Siguas sub-basin. On the other hand, the Siguas, Molles and Quilca sub-basins are in hands of the ALA from the Camana-Majes basin. This situation creates confusion among the population in the Quilca Valley, because when they try to complain about water contamination they are told, “it is not in my jurisdiction” (Technical Report Chili Basin, 2011).

Another example of this watershed unit disintegration is that fact that not all of the nine Water User Associations are within the scope of the ALA from the Quilca-Chili basin. There are three within the jurisdiction of the ALA from Camana-Majes basin. This situation creates numerous problems when implementing regulations because of the multiple operators, elevated administrative costs, and lengthy process for solving claims that arise in the maintenance of greater infrastructure. In addition to this, the complexity of watershed management, characterized by cross-sectoral water use, was very prone

to institutional and sectoral disagreements, problems and conflicts over water management (Technical Report Chili Basin, 2011).

Conclusion

The 2006 social mobilization against the Cerro Verde mine (SMCV) serves as a window into analyzing what water justice means in Arequipa. It is the story behind the conflict that is really interesting. This chapter focuses on presenting the main protagonists who give life to water conflict in Arequipa, describing the bio-physical attributes of the Chili-Quilca River watershed, and presenting a historical account of the process by which the governing of water turned into the governance of water.

The quantity of water in the Quilca-River basin is a problem because of its semi-arid environment, demographic expansion, and increasing water demand from the mining sector. In terms of water quality, the Chili River is severely contaminated by wastewater on its middle reach. The governing of wastewater and the legal protection of the quality of water is deficient because rather than contributing to a viable solution it does nothing to force sectoral authorities to take action. Currently there are laws and sectoral norms that are supposed to regulate water quality. Impunity, however, is what characterizes the dumping of polluted water to rivers and streams (Technical Report Chili Basin, 2011).

Water service in the city of Arequipa is very unequal. SEDAPAR, the public Water Supply and Sewage Company of Arequipa, provides water for 85% of the population. As migrants from the southern region of Peru migrate to Arequipa and population grows, new communities rise with no or limited access

to potable water. Therefore 15% of the population with no access to water is concentrated on the northern and eastern outskirts of the city. The quality of life for people living in these communities is very low. Many of them have organized into Defense Fronts, such as FREDICON in order to demand their human right to water and a healthy environment. In addition, only 10 percent of the sewage from Arequipa is treated. All these factors make the construction of a potable water and wastewater treatment plant imperative.

When mapping water rights in the basin, we uncover a plurality of understanding of water-society-nature power relations. In the basin are at least five different versions of water rights. This finding points to the idea that not only the governing of water is contested, but so is the meaning of water justice. By describing different views of water rights, we become aware of water's hybrid nature in that water's materiality, social and discursive imaginaries reflect the material and cultural processes through which water are constructed in particular ways (Swyngedouw, 2004; Budds & Hinojosa, 2012).

In this chapter I argue that the governing of water in Peru has changed through history from water government to water governance. One of the characteristics of water governance is the increasingly powerful role private actors acquire, and the loss of the modern state´s monopoly power. In the case of Arequipa, the growing role of the mining sector, through the Cerro Verde mine, in the governance of water and the unofficial water governance scale represented by the Multisectoral Committee shows that "water governance comprises a range of

practices and discourses performed by various social actors, in different places, at specific moments and with multiple connections" (Budds & Hinojosa, 2012).

I also argue that it is necessary to analyze the politics of scale in water governance. Water governance in Peru incorporates the international discourse that the watershed scale is the "best" unit of governance in the recent Water Resource Law. As Budds and Hinojosa (2012) argue, this research illustrates that there are diverse practices over space and time that do not neatly coincide with either the administrative structure or the river basin scale that form the bases of the new water governance framework. Such is the case of the Multisectoral Committee, which governs in juxtaposition to the Watershed Council. But in addition to these different water governance scales, each social actor in the Chilca-Chili River basin performs different practices and discourses of water. The scale in which Cerro Verde mine governs water confirms Budds and Hinojosa´s (2012) findings that in the mining sector the watershed/basin unit is actually of very little significance for managing and governing water. Instead, as this case shows, processes such as inter-basin transfers, as well as the use of treated wastewater are more salient. Different scales confront and inter-relate with each other co-constituting territorial frameworks for social relations (Brenner, 2000).

CHAPTER THREE

POLITICAL SOCIETY AND ACCESS TO WATER

"Power is a social relation and it should be treated as such"
(Gustavo Esteva, 2011).

Figure 8: View of Hijos de Ciudad de Dios taken from mountainside, North Cone, Arequipa. Photography by author, taken August 2011.

Ten years ago, Moisés arrived to the city of Arequipa from the province of Quispicanchi, Cusco. "I remember waking up everyday to the magnificent image of the Ausangate snow peak standing at a distance," (personal communication, August 2011) he told me as he made a left turn on the San Francisco Street in downtown Arequipa. It was a typical, cold night in the city. I had the habit of initiating conversations with taxi drivers and getting to know life through their perspective. This time, though, the taxi driver had opened up about his life as a migrant. The city of Arequipa hosts the largest number of internal migrants in southern Peru, mostly from neighboring regions of Puno and Cusco. I was eager

to know more about Moisés's life as a migrant in Arequipa. Moisés continued his story:

> In Quispicanchi, life passed by as any other day. We were peasants, my family had a small house, some lands, and we raised some animals. My uncle came to Arequipa more than thirty years ago and when he visited our village he encouraged us to come to Arequipa with him. There were no jobs in Quispicanchi. One day my brother and I decided to follow his advice. (personal communication, August 2011)

At first Moisés stayed with his uncle, but soon after he moved to another neighborhood where he rented a small room with his brother. Life was expensive in Arequipa, Moisés and his brother had to labor in whatever jobs they found in order to pay the rent and survive. The struggle for work affected Moisés' mobility, which he went on to discuss:

> I lived in Miraflores, in Selva Alegre, at one point I even lived in downtown Arequipa. Two years ago, I decided to buy a piece of land of 200 square meters in Hijos de Ciudad de Dios. At the time it cost me 1,200 soles.[13] One of my cousins convinced me of the benefits of building your own house. (personal communication, August 2011)

Like many new settlements in the North Cone, before its foundation Hijos de Ciudad de Dios used to be mountainous desert landscape at the city outskirts. Little by little, people began building houses and settling. Mostly owned by the

13 In U. S. dollars (USD) this amount ranges between $400 to $450 dollars depending on the exchange rate at the time. For the past two years, the exchange rate for 1 USD ranged between S/. 2.68 to S/. 3.00 soles.

state, land in this part of town is considered too dry for agricultural use and is therefore destined to urban growth. Land acquisition is informal and based on occupation or settlement followed by land tenure formalization. Moisés lived in a one-bedroom house with his brother where he had to become accustomed to a place with no water. In Moisés' own words:

> What is most difficult about living in Hijos de Ciudad de Dios is not having water. It is very difficult to get used to life without water. I'm considering very seriously moving back to downtown until water arrives to that part of town. (personal communication, August 2011)

Moisés believed that when water service becomes a reality then that part of town will change significantly. But this change is yet to come, and so "there is nothing there."

Unequal water provision and poverty are some of the concerns that provided the backdrop to the analysis of water justice in Arequipa addressed in this study. The analysis of water justice, however, begs the question of how power is performed and how water rights are understood. In this research, power is understood as a relation and a structure. People can be the object of power, but at the same time people can be the subjects of power (Bhabha, 1990). Therefore, it is crucial to analyze how power is performed through relations between different state and society actors and to analyze how water governance is constructed. Rights in this research are understood as a socio-cultural discursive construction and an expression of power (Boelens & Hoogendam, 2002; Goodale & Merry,

2007). In this research, the analysis of the meaning of rights comprises a much broader understanding than that employed by classical modern political theory.

By focusing on the case study of water conflict in Arequipa, this research is rooted on two main ideas regarding power. First, as shown in the preceding chapter, there are complex power interrelations and different scales of water governance (Brenner, 2000; Budds & Hinojosa, 2012). The official water governance scale legitimized by the Peruvian state coexists with other scales of water governance. Some of these scales act as de facto governing structures under the hegemonic power of nonstate actors. In this regard, this research "questions the multiple power relations—and scalar geometry of these relations—through which unjust socio-environmental conditions are produced and maintained" (Swyngedouw & Heynen, 2003, p. 901). The second departure from main ideas regarding power is that Peru is governed by the residues of a colonial system that excludes non-white people and discriminates on the basis of race and class (de la Cadena, 2004; Quijano, 2000a; Tejada, 2011). Following independence from Spain, Peru's elite embarked on the conquest of modernity and worked toward the materialization of western political institutions such as the nation-state. Peru's elite aimed at achieving modernity through linear historicist development thinking that moved from a backward to a modern or civilized condition (Anderson, 1998). In Peru, as in the postcolonial world, power inhabits a much more dense and heterogeneous time and space (Chatterjee, 2004; Roy, 2009)

This chapter focuses on water governance and specifically water provision for the city of Arequipa as seen through the eyes of urban squatter organizations

in the North Cone. As briefly discussed in the previous chapter, urban squatter organizations played a key role during the social and environmental conflict with the Cerro Verde mine and state authorities—a conflict that resulted in the construction of potable and wastewater treatment plants for the city of Arequipa. I argue that in the face of Peruvian state coloniality of power (Quijano, 2000a), marginal urban communities organize under adverse circumstances to defend their right to water and to a healthy environment. Urban squatters challenge a hegemonic, western understanding of law and venture into that which is not legal or "informal," thereby admitting the coexistence or interlegality of other forms of law (Santos, 2002). When struggling to achieve a decent life, the poor and underprivileged established a relationship with main water governance actors—the Peruvian state and the Cerro Verde mine—similar to what political scientist Partha Chatterjee (2004) referred to as *political society* and what anthropologist Appadurai (2002) termed *governmentality from below*. Based on an ethnographic approach, I try to *speak nearby* (Minh-ha, 1989) urban political society.

Four main sections form this chapter. First, I present the story of the North Cone, which is one of the most important squatter settlements in the city of Arequipa. This story is important because the formation of the North Cone provides background for understanding squatters' relation to space and power. The squatters' view draws attention to relations with political society, the presence of interlegality, and the production of urban space. Second, among all the autonomous social organizations in the North Cone, the Defense, Integration, and Development Front of the North Cone or Frente de Defensa e Integración del

Cono Norte (FREDICON) stands out for the role they played during conflict with the mine. Their understanding of power, as this research demonstrates, goes beyond the logic of the modern nation state. Third, I move towards presenting the story of water service in Arequipa and more specifically in the North Cone. This story adds to the analysis of political society and water in Arequipa. Fourth, I delve into the forms of mobilization, agency, and resistance FREDICON employs in their struggle for water. Through everyday acts, people like Moisés construct new urban territories as well as political and legal relations. Answering Roy's (2009) call to articulate new geographies of urban theory by generating urban theory produced in the global south for all cities, this chapter posits that FREDICON's struggle for water in the city of Arequipa, Peru, is the possible model for achieving water justice.

The Story of the North Cone

The day was sunny and hot, and the clock displayed 3:05 pm. I sat in front of San Francisco Church waiting for Moisés to arrive. Two days ago, we had agreed that he would take me to the North Cone and show me his home. My phone rang as I looked around trying to find him. I spotted his car. As we entered his part of town through Av. Aviación, Moisés made an effort to indicate the main landmarks in the area and he explained, "This part of the North Cone is known as the Margen Derecha [Right Side]. That over there is a human settlement Ciudad Municipal [Municipal City], this part is still under the municipality of Cerro Colorado." We drove along the Av. Aviación into Yura. As Moisés pointed to the names of each one of the settlement associations we passed by, I observed patches

of small cement houses and that of square empty lands limited by stones. One could observe the process of a city in construction. "How do cities come to exist?" I asked myself, and there I was, observing the social phenomenon firsthand.

The North Cone began as a political project in the early 1980s. Started under the auspice of the left-wing local government of the Municipality of Cerro Colorado, the North Cone project was thought of as a grand municipal city project (Santiago, personal communication September 10, 2011). Elected Mayor of Cerro Colorado, Luis Guillermo Gallegos Portugal, historian and active member of the Communist Party Patria Roja (Red Homeland), was the driving force behind this grand project (Santiago, personal communication September 10, 2011). According to Santiago, a housing association leader in the North Cone, "It was a political left-wing project. The Communist Party Patria Roja in coalition with the student movement Unidad Nacional de Izquierda Revolucionaria, UNIR (Left Revolutionary National Unity) planned it as an urban habitation project" (personal communication September 10, 2011). Many of Patria Roja's officers moved to Cerro Colorado and worked on this project. Santiago recalled his first experiences involving North Cone:

> One day I passed by the Plaza de Armas with my girlfriend and I find all my university colleagues, leaders of Patria [Roja] and UNIR. And I ask them: what are you doing here? I find them ready to embark to the North Cone. They had been going to take land in the North Cone. Gallegos was saying that they were giving lands to all students from UNIR. I

> immediately went to the Municipality. All those students paid nothing, members of the party went [to the North Cone] free of charge. I went and registered myself and paid 5,000 intis at the time. My girlfriend also paid 10,000 intis for industry and housing. (Santiago, personal communication September 10, 2011)

In 1981, Cerro Verde Municipality established a registration system to acquire land in the North Cone. "There were good intentions at the time. The idea was to help low income families obtain land and their own house" said Santiago, one of the first to register in 1981 (personal communication September 10, 2011). More than 10,000 people registered to acquire a piece of land in the North Cone. Selection rules were established because the demand was so large. Santiago recounted "So people came by groups. For example, one day a group of teachers would register together. Another day members of the police force and so on" (personal communication September 10, 2011). "At the beginning there were only street plans. When you went to see your plot of land you encountered a desert," narrated Santiago (personal communication September 10, 2011).

The Municipality used registration fee monies for infrastructure work in Cerro Colorado. Meanwhile, Patria Roja worked to plan the organization of the North Cone. Newly formed housing associations organized meetings to plan future habitation. At that time, hardly anyone lived there; it was just desert and rocks. During the formation of the North Cone, the majority of new dwellers politically supported Cerro Colorado's Mayor. "At one point he controlled 10,000 to 20,000 leaders, could you imagine that?" said Santiago (personal

communication September 10, 2011). He continued: “Many leaders of Patria Roja who participated on building this project demanded their street block. I also demanded a street block for the people who registered with me. They gave me and another associate a street block” (Santiago, personal communication September 10, 2011). At the time, each street block had one delegate who would represent other associates at the Delegate Assembly. Delegate Assembly meetings were held at Cerro Colorado’s Municipality, and as Santiago recalled:

> The Mayor would call for a meeting and we would all listen. In those meetings the Mayor was the King by imposition. In the hustle of the first meetings, I ask the floor and say: “You know what, Mr. Mayor, a lot of money is entering [the Municipality’s Treasury] because I paid [my fee]. Those who have not paid say nothing! And I request to use the money that has been paid to buy two tractors to begin building the planned roads.” The man looked at me and said: “what the hell do you know kid?” He was a dictator. He imposed what he wanted, he spent the money on the infrastructure he considered important. (personal communication September 10, 2011)

Gallegos Portugal declared himself President for life of Ciudad Municipal, the first city in the North Cone. His control lasted only from 1980-1983. The same people who supported his mandate later rebelled against him because people wanted to organize their neighborhoods and housing associations by themselves. In 1983, people rebelled by organizing a General Assembly. At the time, Arequipa’s Provincial Municipality was also run by another left-wing

government. Provincial Mayor Villalobos Ampuero viewed Gallegos Portugal's popularity in the North Cone as dangerous. As a result, he decided to enact Provincial Resolution 0100, which allowed the Provincial Municipality to issue land titles for other housing associations in the North Cone. Santiago recounted his experience:

> In the case of my housing association, Ciudad Municipal, Ampuero issued land titles to land plots that already had owners; he wanted us to leave in order for others to inhabit the same place. That is when land tenure conflicts began. (personal communication September 10, 2011)

The Provincial Municipality of Arequipa began registering people for a piece of land in the North Cone. An example of this is the story of Alberta Chavez, who recalled the following experience:

> It was at the time of Provincial Mayor Villalobos Ampuero that I acquired my land by means of the provincial council. It was by chance since I went to get a birth certificate and I find by surprise that they were registering several people who did not have any land, who had no home. The provincial council at that time was located at the Plaza de Armas. I heard they were registering those people who had no home or land, to give us that opportunity to have a house. I made my queue and registered. Time passed by and a social worker went looking for me to the house I was living in Paucarpata. More time passed by, and in 1984 they called me and told me they had a plot of land for me in the Chavez Bedoya Association. (personal communication August 2011)

In view of this and in desperation, Gallegos Portugal called for a meeting in Arequipa's Plaza de Armas to protest against resolution 0100 and demand its nullity. At the meeting, Gallegos Portugal and a group of other 30 residents of the North Cone declared they were going on a hunger strike.

During this skirmish, the first social organization of the North Cone was formed as an instrument for defense of the land and against Gallegos who was on hunger strike. That was when Nina Quispe led the masses as Secretary General—the first Secretary General of all the North Cone and the first seeds of FREDICON. However, this first organization was anarchist and amorphous in nature. As such, it could not compete against Gallegos Portugal's dictatorial leadership. People like Santiago noticed the inability to compete:

> In the hustle of the hunger strike people started asking themselves: "what are we doing following these guys and not deciding anything?" I had 36 associates who were part of my street block and who wanted at least a piece of land. And Horacio Games, a congressman told us: "What are you doing here in the Plaza?" There were daily marches, a permanent struggle. "What are you doing in the Plaza?" "We come for our land! We want our land!" we replied. He said to us: "Why are you so silly? Go and take the land! What are you doing with these halfwits on hunger strike? Go and take possession of the land and then things will settle." Why did he say that? People went and took possession of the land. (Santiago, personal communication September 10, 2011)

Eventually, Gallegos Portugal was accused of misappropriating public funds. Although many, including Santiago, considered that Gallegos Portugal never stole money from the people, but instead believe his main problem was his dictatorship and absolutist attitude (personal communication September 10, 2011). Nevertheless, Gallegos was found guilty of charging unlawful registration fees and misappropriating collected funds.

As I recovered the story of the beginnings of the North Cone, I began to understand how power, land and property, and social organization merge to give birth to the postcolonial city. When I say postcolonial, I recognize the influence and implications of western colonial and economic dominance, but at the same time question the homogeneous lived expression of modernity in former colonies. Places like the North Cone show us how politics inhabits a heterogeneous modernity of time and space (Anderson, 1998; Chatterjee, 2004).

Postcolonial scholars who study state-society relations in Peru, such as Anibal Quijano (2000a), view the state as the extension of colonial power—a form of domination that governs through racial classification and a new structure of labor control. I argue that, in the case of the North Cone, coloniality of power resides on two axes. On the first axis, an economic axis, is a hybrid system ranging between the informal and the free market economy. In this regard, the story of Moisés represents the story of many who, like him, subvert legal channels of land acquisition established by the post-colonial nation-state and follow informal land tenure processes in order to build lives of their own. The other axis is one of racial and social exclusion that spatially segregates populations. For

example, in Arequipa, the rich are concentrated in more central districts like Cayma while the poor are concentrated in northern or southern peripheral districts. In addition to class segregation, racial discrimination in the city of Arequipa is rampant. During fieldwork, it was common to hear phrases charged with racial prejudices. This was not a surprise, because being a Peruvian national myself I had always been intrigued by how racial discrimination was assumed as normal and part of Peru's social hierarchies. Both those who discriminated and those who were discriminated against had internalized racial discrimination to such an extent that it was normalized. Such normalization was seen in prevailing attitudes, such as the North Cone being "a slum full of Indians from Puno" and because of "those migrants criminality in Arequipa had risen" (conversations with city dwellers).

Politics in the formation of the North Cone is understood differently than classical modern theory. Classical modern theory of nation-state, citizenship, and democracy, as stated by Chatterjee (2004) views the nation-state as being founded on popular sovereignty and granting equal rights to citizens grouped in civil society. Instead, the politics performed in the North Cone were more aligned with what Chatterjee (2004) referred to as political society. At the beginning of the formation of the North Cone, poor populations or people with no residences of their own were the beneficiaries of the local politician's housing program. Political society is the way populations interact with governmental agencies through the context of multiple policies of security and welfare. Later on, after local state programs were cancelled, more informal paths toward land acquisition

were installed. People like Moisés transgressed the strict lines of state legality in order to live and work (Chatterjee, 2004). Political society is not granted real citizenship since they are "tenuously, ambiguously or contextually rights-bearing citizens" (p. 38). Chatterjee's (2004) theory of political society proposed to think about those who govern and those who are governed. In this regard, the theory views governance as the body of knowledge and set of techniques used by or on behalf of those who govern and views democracy as the politics of the governed.

Political society "is not treated the same as other civic associations who follow legitimate social pursuits" (Chatterjee, 2004, p. 40). Governmental agencies, paraphrasing Chatterjee (2004), deal with political society not as bodies of citizens, but as convenient instruments for the administration of welfare to marginal and underprivileged population groups. The case of the formation of the North Cone shows how government authorities or agencies use paralegal arrangements to provide habitation for these poor or underprivileged groups. North Cone's informal settlements were established with the explicit acquiescence of local and regional state authorities. It is interesting to see that municipal authorities utilized land registration as a way to gain political popularity. Land registration, though, did not properly entail the legalization of land titles. In many regards, these authorities contributed to illegal land occupation but acted "according to calculations of political expediency" (Chatterjee, 2004, p. 40).

Those who subscribe to the state's monopoly of power regard this informal type of relationship between squatters and land as illegal. However, I

propose to consider this relationship as informal instead of illegal. Instead of viewing informality as a pre-capitalist relic or an icon of so-called backward economies, this research follows Roy (2009) and views informality as the primary mode of production of the 21st century metropolitan space. Portes, Castells and Benton (1989) and more recently Roy (2009) showed how state power determines what is informal or not. Informality according to these authors is situated informality within the scope of the state rather than outside it (as cited in Roy 2009, p. 826). That is precisely what cities in the South like Arequipa teach us. Moreover, Roy (2009) added that "in many instances the state itself operates in informalized ways, thereby gaining a territorialized flexibility that it does not fully have with merely formal mechanisms of accumulation and legitimization" (p. 826). In the case of the North Cone's urbanization process, local authorities not only formalized what was informal land tenure, but also went beyond their elected functions and self-attributed jurisdictions and functions outside of the scope established by local law. In this regard, mayors ventured into the realm of interlegality. Interlegality, according to legal scholar Boaventura de Sousa Santos (2002) referred to the possibility of having different discourses and practices of law superimposed, interpenetrated, and mixed at one time and space.

In squatter settlements, such as Hijos de Ciudad de Dios, people established relationships with their surroundings (such as nature and society) based on day-to-day interaction and their social and cultural understandings of power. As a socionatural element indispensable for life, water becomes fundamental for the existence of nature and human beings as well as the urban

process. The urban process should be viewed as a political ecological process (Swyngedouw & Heynen, 2003; Swyngedouw & Kaika, 2000). After more than 30 years of development, I was riding with Moisès over a recently paved road in the North Cone. Roads and streets, although still made of dirt, were now a reality. The dream of the North Cone in 2011 was not a dream anymore; it was a city in the making.

FREDICON is Born

The first seed of an autonomous social organization in the North Cone was planted in reaction to Gallegos Portugal's dictatorial power. However, the need to form a cohesive social organization in defense of lands and a habitation project in the North Cone became evident as land tenure conflicts arose. In 1983, people like Santiago followed the advice of congressman Horacio Games and abandoned the hunger strike and went to take lands in the North Cone. The act of taking possession of the land caused a change in people's attitudes to settle in their land and start building their life there. People were tired of the mayor charging fees for the land but not building basic infrastructure for the inhabitants of the North Cone. So, when Mayor Gallegos Portugal returned to Ciudad Municipal, people ousted him and disavowed his authority (Santiago, personal communication September 10, 2011). Santiago gives a detailed account of what happened next:

> People were hungry and thirsty. There was no water. So necessity began. A transitory board was formed. Gerardo Ra is elected president of Ciudad Municipal. During that time Ciudad Municipal included all small settlement associations. This was a historic act, since it was the first time

> social organizations separated from Cerro Colorado [Municipality's umbilical cord]. Gerardo Ra starts giving land to people and straightening up things. He was not a person of authority anymore but someone like us. This is when human groups begin. (personal communication, September 10, 2011)

As settlers began forming housing associations, these organized groups started undermining Gerardo Ra's authority. Many newly formed associations were fighting about the borders of where their organizations would be involved. It was all a chaos. In light of this, a General Assembly meeting was organized. Delegates from all the recently formed housing associations participated. This time, though, instead of having large number of delegates, there were 30 to 50 delegates representing each one of the housing associations. As a result of this meeting, an organizing commission for a Unity Congress of Ciudad Municipal in the North Cone was formed. According to members of the commission, there was no real willingness to integrate housing associations into one organization (Santiago, personal communication September 10, 2011). Ultimately, some members resigned and the Unity Congress was aborted. In 1984, housing associations continued to flourish independently. In the meantime, Gerardo Ra remained in power as a self-proclaimed Governor of Ciudad Municipal. People demanded elections, but he refused to organize elections. People then proceeded to throw him out of Ciudad Municipal. An electoral jury was established and Marco Montañés Macedo was elected President of Ciudad Municipal. Second in

command for Montañés Macedo's was Santiago Ramos, who acted as spokesperson and local leader.

The first building blocks of FREDICON were laid in 1984 with the help of the historic Association of Popular Urbanizations in Arequipa Asociacion de Urbanizaciones Populares de Arequipa (AUPA). However, it was not until 1986 that FREDICON was legalized as a social organization in the North Cone. That same year, Santiago Ramos replaced Montañés Macedo as President of Ciudad Municipal. Under Ramos' leadership, Ciudad Municipal joined FREDICON. Ciudad Municipal had a strong organization and gave FREDICON fresh impetus (Santiago, personal communication September 10, 2011). Other housing associations in the North Cone attempted to form another defense front but failed to do so. Santiago Ramos occupied the Presidency of Ciudad Municipal in the years to come except for seven years in which another member of his party served as president. "FREDICON became the sole coalition of housing associations in the North Cone and drew the majority of housing associations into its rank and file" (Santiago, personal communication August 18, 2011). Eventually, Ramos became President of FREDICON.

Santiago Ramos came to personify the best and the worst side of FREDICON. One of the most controversial social leaders in the city of Arequipa, Santiago invoked attitudes of mistrust toward Arequipa's elite and middle classes, and respect to the underprivileged and poor. For some, Santiago was an immoral and smug. "Santiago is a land trafficker, a person without scrupulous. He illegally sells public lands to poor people and profits from them" said a state functionary

(anonymous personal communication, August 2011). For others, especially the underprivileged, Santiago was a generous leader. “When Santiago fell sick, you have no idea all the people who went to see him, to thank him. There were lines and lines of people waiting to greet him. Santiago represents hope for us” (Alberta, personal communication 2011, August 2011). Santiago’s contradictory representation illustrates how under a condition of interlegality, “the subaltern is simultaneously strategic and self-exploitative, simultaneously a political agent and a subject of the neoliberal grand slam” (Roy, 2009, p. 827). His ambiguous and defying relation with the legal sphere “is not some pathological condition of retarded modernity, but rather part of the very process of the historical constitution of modernity” (Chatterjee, 2004, p. 75).

FREDICON had the vision of building a model city. “We tried doing that, we did some by building the roads, but we could not control everything. We lacked experience; we lacked a lot. But we maintained an organization FREDICON, and we created the North Cone Council” recounted Santiago (personal communication September 10, 2011). The North Cone Council was created following the inspiration of other squatter communities in Peru, such as Villa El Salvador in Lima who fought for their political autonomy. Politically, the North Cone was divided into three municipalities (see Figure 9). The eastern portion forms part of the Municipality of Cayma. The central and larger section was part of the Municipality of Cerro Colorado. And the western portion was part of the Municipality of Yura. These three municipalities extend beyond the borders of the North Cone; however, all three areas of the North Cone have more in

common with each other than with the other sectors of their Municipal districts outside of the North Cone. Therefore, the idea of forming the North Cone Council was a first step into establishing the Municipality of the North Cone. Although not recognized legally, the Municipality of the North Cone was established by FREDICON and played a key political role.

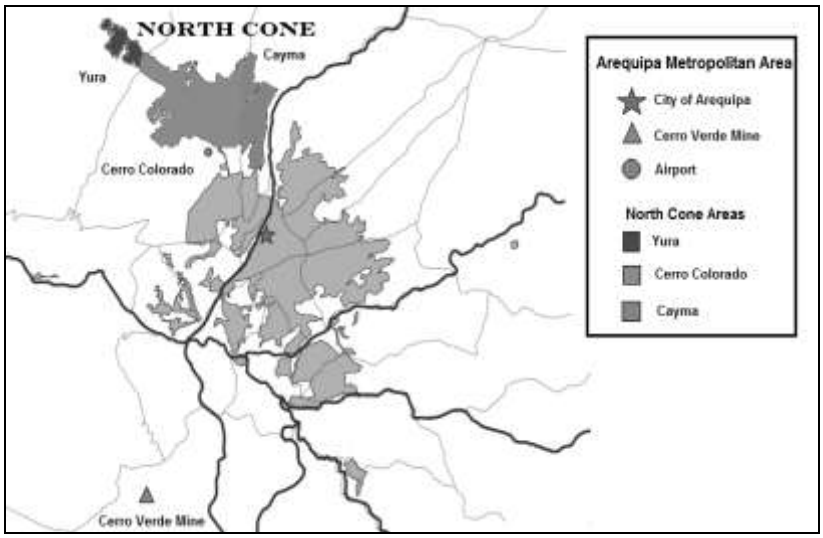

Figure 9: A map of the North Cone that shows the three municipalities in the region. Map adapted and drawn by author.

In the process of building a city, FREDICON established institutions and laws parallel to Peru's. State legal discourse and practice was superimposed and at times interpenetrated with local legal discourses and practices, which produced a space of interlegality. In this regard, FREDICON imagined the North Cone as a political and rhetorical space where they would build a model city. Space, then, is understood "as a site of production and reproduction of social agency, and institutions, of power, legality and knowledge" (Santos, 1995, p. 457). It was in the space known as the North Cone that FREDICON imagined an ideal community and worked towards making it a reality. To make it a reality,

FREDICON built on autonomous governing arrangements that coexisted by either inter-relating or contesting the state's government. As articulated by Brenner (2000) "the struggle then to command and gain control over space becomes a central element of everyday life, industrial production, political regulation and geopolitical conflict in all geographical scales" (p. 373). By producing and reproducing power, social actors brought together through FREDICON were able to transform an empty desert space into a living city. Water was an essential element for this transformation.

Water Service in the North Cone

"In this part of town, there is no potable water or sewage system. We get our water from public water taps. You see . . . here is one water tap", said Moisès as he pointed out a cement rectangle with a water faucet. Empty buckets had been lined up next to the water tap. The water system in this part of Arequipa consisted of water tanks connected to public water taps through pipelines. Water tanks were constructed by the Municipality of Yura and by the national government. Tanks were filled with water by tanker trucks. Moisès was able to speak to the frequency with which the tanks were attended to:

> In my association, tanker trucks come inter-daily, only Tuesdays, Thursdays and Saturdays. Therefore, water is scarce. Usually in the morning from 7 to 10 am the person in charge of water distribution in the block unlocks the tap. Neighbors line up with their buckets. One by one, buckets are filled with water until the tank empties. I have to leave for work before 7am, so I can't fill my bucket during this time. What I do is

then is leave my bucket next to the tap and when I come back after work late at night I pick up my bucket. Sometimes it is filled sometimes it is empty.

I was there on a Saturday afternoon and could see empty buckets lined up next to the public water tap.

Figure 10: Buckets lined up next to a water tap in Arequipa. Photograph taken by Author July 2009.

The history of the sewer system in the city of Arequipa dates back to the year 1600 when a bishop took water from the Miraflores canal and filtered it to the Plaza de Armas' water fountain (Pozo, personal communication 09-01-2011). Later on, water was supplied by the Yumina spring. According to a personal communication with Guillermo Pozo, and 82-year-old, local engineer, in the mid 1920s, U.S.-based The Foundation Company executed the sewer system project in Arequipa and changed the water source to La Bedoya spring (Pozo, personal communication September 1, 2011). This was a historical moment in the urban

history of modern Arequipa. For Arequipa's oligarchy, the advent of science and technology through hydraulic infrastructure signified power and progress (Pozo, personal communication September 1, 2011). Pozo recalled that "Very few had access to an engineering education. It was reserved for the oligarch's children and exceptionally some academic genius" (Pozo, personal communication September 1, 2011). In 1952, during the government of Manuel A. Odria the first potable water treatment plant named La Tomilla was inaugurated. This new plant took in water from the Chili River and supplied potable water to the Cayma and Yanahuara districts (Pozo, personal communication 09-01-2011).

Following two major earthquakes in 1958 and 1960 Arequipa was in state of emergency. Earthquakes caused severe infrastructure damage and a high number of deaths. At that time, the city of Arequipa consisted only of the enclosed square known now as downtown and the adjacent district of Miraflores. Water for this part of town was supplied by La Bedoya spring, while residential districts such as Cayma and Yanahuara used water from La Tomilla plant. Following the earthquakes, people living in the downtown area left their old houses for fear they would collapse and went to live outside the residential areas. The majority of surrounding residential areas and rural villages had their own water supply systems, usually from groundwater and/or water springs. Arequipa's Municipal Council ran potable water service and served merely 39% of the city's population. When the population shifted to residential areas, it prompted concern with regards to water supply. In 1958, engineer Jorge Pflucker Holguin developed a comprehensive, 30-year, basic sanitation plan for the city of Arequipa, also

known as the Pflucker Plan. Given Arequipa's emergency situation, this plan was presented to the Inter-American Development Bank (IDB), and the IDB granted a credit line to finance the comprehensive sanitation project. "The IDB approved a credit line, it was credit number 0001, which meant the IDB inaugurated in Arequipa" recounted engineer Pozo (September 1, 2011).

Comprehensive sanitation work began in 1962. As major infrastructure and reconstruction work began, employment in Arequipa rose, which brought migrant workers from neighboring departments. As Pozo explained:

> Half of Puno came to Arequipa. So, what occurred was that [Arequipa's] growth curve exploded. And that was not foreseen in the plan. Where did these people, who came for employment reasons, live? They went to the higher parts of the mountains. We needed to provide basic sanitation to those people. But La Tomilla plant was located lower in altitude and water could not reach there. (Pozo, personal communication September 1, 2011).

The migrant workers were not considered in the city's water provision calculation and as a result the Pflucker Plan was reformulated. The only possible solution was to pump water to serve them. This is when the first pumping chambers appeared in Arequipa.

The post earthquake era brought new residents and new government institutions to the city. Institutions such as the IDB, the Board of Rehabilitation and Development of Arequipa, and the Board of Public Works were created during the time. The Provincial Council met with these three entities and proposed the creation of an institution in charge of potable and sewage water

services to the national government. Created in 1962, Arequipa's Sewer Corporation (Corporacion de Saneamiento de Arequipa) was a decentralized, public institution in charge of providing potable and sewage water services (Pozo, personal communication September 1, 2011). Five years later, in 1967, reconstruction work was completed and the Corporation's function came to an end.

By 1977, there were signs of shortcomings with the Pflucker Plan. People who served from the Bedoya springs complained about water cuts and shortages. The Pflucker Plan needed another readjustment, but it was not as elastic as before. Engineer Mario Bustamante Ramos had already readjusted the plan, extending its validity until 1988. By then, Arequipa's Sewer Company had gone through legislative changes and had morphed into Arequipa's Water Supply and Sewage Company, or Servicio de Agua Potable y Alcantarillado de Arequipa (SEDAPAR). SEDAPAR remained a public company but under a private administration governed by a board of shareholders and composed of municipal mayors representing Arequipa's citizens.

In light of the shortage in water service supply, SEDAPAR decided to conduct another comprehensive and basic sanitation plan. In order to do this, a general urban development plan was needed. Although municipalities were usually responsible for elaborating this plan, due to a lack of municipal leadership, SEDAPAR paid for and implemented the plan. Based on the city's development plan, another 30-year, comprehensive sanitation plan was designed,

which would last from 1980 until 2010. As part of this plan, La Tomilla water treatment plant was expanded to 1,500 liters per second.

Founded in the early 1980s, the North Cone was not anticipated in the Urban Development Plan, therefore excluded from the 1980-2010 Water Sanitation Plan. Because of this, SEDAPAR denied the feasibility of water sanitation projects in the North Cone. By the early 1990s, SEDAPAR was reformed. The reform included the insertion of elected mayors into the shareholder board. With this change, politics was introduced into the governing of SEDAPAR (Pozo, personal communication September 1, 2011). In 1994, the same year the government of Fujimori enacted neoliberal reforms in the water sector, Arequipa was forced to open a North Cone Special Project office after many protests and mobilizations organized by FREDICON and SEDAPAR.

As part of the neoliberal reforms enacted by Fujimori the National Sewage Services Superintendent, or Superintendencia Nacional de Servicios de Saneamiento (SUNASS) was established. SUNASS functioned as a regulation entity in charge of auditing all water supply and sewage company providers. According to engineer Pozo, the creation of SUNASS weakened internal audit controls in SEDAPAR (personal communication September 1, 2011). SUNASS also lowered the water tariff gradually from 14.80 to 4.80 new soles (Pozo, personal communication September 1, 2011). According to engineer Pozo, this change in tariff accentuated the already financially troubled company, and he noted that “This measure was interpreted by many as a way to force public sanitation companies into failing and justify privatization” (personal

communication September 1, 2011). SEDAPAR reached a deficit of 50 million new soles, and sewage plans for the city of Arequipa were put on hold. No international agencies wanted to lend money to SEDAPAR. By 2000, the first phase of the second water treatment plant was schedule to be functioning. Then it was scheduled for 2012. A large wastewater treatment plant named La Estrella was scheduled for 2002, but as of January 2012, there were no established dates for the construction of the plant.

FREDICON and the Peruvian State: Right to Water

Since its establishment, FREDICON has pledged to bring water to the North Cone (Santiago, personal communication August 18, 2011). Bordering the skirts of a mountain chain, the North Cone is an area characterized by the aridity and roughness of its terrain. With a membership of 95 housing associations from a total of approximately 132 associations in the entire North Cone area, FREDICON has struggled for basic social services, such as water provision, for each one of its members (Santiago, personal communication August 18, 2011). North Cone's urban expansion has produced many housing associations, some celebrating their 30th anniversary, others their 10th anniversary, and many more are founded everyday. While some associations like Ciudad Municipal have water provision in their homes, other associations still utilize buckets to bring water home. Regardless of what stage of water service provision the associations are at, each association went through similar processes in order to attain piped water.

FREDICON's relationship to the state at the local, regional, and national level was ambiguous and contradictory. One the one hand, FREDICON's leaders

asserted, “The state means nothing to us” (Fernando, personal communication August 30, 2011). On the other hand, after hearing and learning about their history, the state became a clear protagonist of the material well-being of the population. Part of the task of this research is to analyze what is going on in this relationship. Following Chatterjee (2004) and Tejada (2011), I argue that the concept of political society gives us important insights into this relationship. Organizations such as FREDICON did not act as civil society in that they were not treated as real citizens. They were tenuously and contextually bearers of rights under the modern nation-state. Instead, they were treated by the state as poor populations in need of social welfare and control. Being treated as a population or tenuously as rights bearers did not mean they did not have rights. The organizations add a different social and cultural understanding to the discourse and practice of rights.

In this section, I propose to illustrate FREDICON’s importance and its practice of rights in the governance of water service in the North Cone. Through everyday practices and actions, FREDICON contested and constructed new political and legal relations with respect to the governing of water. In the course of the conversations I had with many of FREDICON’s leaders and through my participation in some of their marches I became a witness of their struggle for water. Among the many actions and strategies used by FREDICON, three stand out. The first notable action included the mobilization and besieging of state power. The second involved the everyday practices and discourses used to attain water. The third pertained to the strategic political alliances built during electoral

campaigns. Each of these tactics, strategies, or practices resulted in very different social interventions and consequences; however, they all pointed to how FREDICON understood the right to water.

There are three stories on which I will center my attention. The first was the creation of the North Cone Special Project Office. The second was the occupation of the Provincial Municipality in 2003. The third was the struggle to increase water tariffs. In all of these stories, FREDICON utilized a combination of actions and strategies in order to pressure the state to meet their obligation of providing water and basic sanitation system. Seldom did FREDICON utilize the language that uses the term rights. Instead, it used a language of "they have to listen to us," "they have to support us," "they have to give us water pipelines," and "they have to assist us." In all of these cases, FREDICON referred to the state's obligation to provide water. The state sometimes acted with total indifference, sometimes in accordance to welfare-provider logic, and other times in a utilitarian way where they calculated the electoral benefits of their support. Seldom did the state anticipate political society's social and economic needs. Therefore, it was as if FREDICON had to constantly push the state into fulfilling its role.

The creation of the North Cone Special Project office. When asked about the timing of the North Cone's potable water system, SEDAPAR officials gave the year 2020. The sewage system was planned for 2030. The North Cone was the only urban frontier not considered in the Sanitation Master Plan. According to Pozo, "The North Cone was the only villain of the movie. It was out

of the feasibility limits" (personal communication September 1, 2011). FREDICON's leaders made a habit of moving water provision dates forward. As President of Ciudad Municipal's housing association, Santiago proposed a potable and sewage water project for his association to Peru's Ministry of the Presidency. FREDICON had participated in recent presidential elections by supporting Alberto Fujimori, who became the Peruvian president in 1990. After securing funding from the Ministry, Santiago hired engineer Luis González Valdivia in 1993. Engineer González Valdivia began the search for possible ways to supply water to the North Cone. He contacted a colleague, engineer Guillermo Pozo, a personal communication source for this research, who was a SEDAPAR officer who had worked on a water projection study for the North Cone and came to the project because he had some specific ideas as to how to bring water in a cost effective way. With the help of Pozo, González Valdivia proposed a plan for water provision in the North Cone.

Knowing there was a feasible water provision alternative, FREDICON decided to fight for the execution of this plan. With vehemence, determination, and constancy, FREDICON organized daily mobilizations demanding SEDAPAR water provision for the North Cone. In 1993, FREDICON besieged SEDAPAR for a day and did not leave until SEDAPAR agreed to create a special project office for the North Cone. Santiago was there for the event:

> You know what they told us at that time? They told us: "but water will be available for 2020. Why do you want an office?" "Exactly for that . . . think about it!" we said. What does engineer stand for? Ingenious,

> someone ingenious to figure out solutions, engineers do not observe and leave things stay the way there are! Bring your best engineers! We forced them to call their best engineers to the negotiation table. They did what we told them because they were surrounded (Santiago, personal communication August 18, 2011).

Among the engineers called to the meeting was Guillermo Pozo. Engineer Pozo knew of FREDICON's struggle and had informally helped design an alternative water provision plan. Santiago explained that Pozo "was a very good person, attached to the popular sector, very technical and socially oriented" (personal communication August 18, 2011). Engineer Pozo offered FREDICON's leaders help only if SEDAPAR granted him full-time responsibility of the North Cone. Finally, in 1994, FREDICON managed to convince SEDAPAR to open a North Cone Special Project office.

The North Cone Special Project office was the first office of its kind. Never before had there been a special office dedicated exclusively to a particular city sector. Pozo recounted in a personal communication that "They created a North Cone office so that instead of bothering the General Manager they could come bother me. Anything you need, go annoy engineer Pozo!" (personal communication September 1, 2011). At first, the office had no secretary and no financial support. Engineer Pozo sat by himself in the office and was supposed to receive all complaints coming from the North Cone. Eventually, the office became the gateway for the inclusion of the North Cone into Arequipa's Sanitation Master Plan. As time passed, SEDAPAR began pouring more

resources into the office. Engineer Pozo remembered dealing with North Cone leaders' demands daily. It was not easy. He had to figure out how to bring water to that area. Based on water availability studies conducted by FREDICON and with the help of engineer Mario Luna, Pozo formulated a three-stage water sanitation project for the North Cone. The project consisted of three phases: emergency, second, and third. The emergency stage supplied water with the minimum quantity of 120 liters per second—the minimum water supply quantity as established by National Construction rules. The second stage supplied water through sewer systems. The third, final, and definitive stage of the project consisted of supplying water from a new city water treatment plant, known as water plant II.

During the emergency stage of the project, Pozo asked SEDAPAR to increase La Tomilla plant's water capacity. In order to do this, a new reservoir of 10,000 cubic meters had to be built, the pipeline from La Tomilla to Cerro Colorado had to be strengthened, and the impulsion line from pump chamber number eight to the industrial park Rio Seco had to be rehabilitated. The initial stage of the project was financed by National Housing Fund, or Fondo Nacional de Vivienda (FONAVI). However, FONAVI was deactivated soon after, which destroyed the hopes of subsequent financial support. After FONAVI's deactivation, there was no financial support. SEDAPAR could not invest one cent in public water services because they were bankrupt. FREDICON vowed to fundraise for each one of the reservoirs and pipelines needed. But, as the

following quote demonstrates, building the reservoirs and pipelines was a complicated process:

> There was a very stupid criterion: every time we asked for water reservoirs to the Housing Ministry, they would respond by saying they could not make reservoirs if there were no pipelines. Then we would go to SEDAPAR and demand the installation of the pipelines and they would respond saying it was impossible to install the pipelines if there were no reservoirs. They kept us in that dilemma for a while. So we took the bull by the horns and said: we are doing everything in parallel and that is it!. Many thought that the state could not invest in white elephants. There were no pipelines if there were not reservoirs. We worked both infrastructure projects in parallel. National and local state authorities would blame each other by saying: "how are you going to build the reservoirs if there are no pipelines?, and, how are you going to build pipelines if there are no reservoirs?" In light of this situation we decided to march to Lima and take the bull by the horns. (Santiago, personal communication August 18, 2011)

A distance of 1009 kilometers and 12 hours by bus separates Arequipa from the capital city of Lima. Through a mix of self-fundraising activities and political sponsorship, FREDICON financed its travel and stay in Lima. In Lima, FREDICON protested in front of state institutions demanding their right to water and many times they held meetings with state authorities.

Each one of the 11 reservoirs built in the North Cone represents struggle, sacrifice, collective solidarity, and enormous resistance. Little by little and many times with squatters' own labor and self-financing, they installed pipeline networks in each housing association. The first housing association that completed their pipeline system for the emergency phase was Ciudad Municipal, and then Margen Derecha. During the emergency phase, at best, some of North Cone's inhabitants get tap water for two hours a day. As of January 2012, the second phase was on hold. The second water treatment plant planned for the city needed to be functioning before the completion of the second phase, which would grant tap water 24 hours a day. At the time the research was conducted for this study, Santiago assessed the situation:

> FREDICON's objectives were met or they are being met, that is a real praise! All of SEDAPAR projects in the North Cone exist because we have fought for them. SEDAPAR alone could not do anything. They have two engineers working on a project and they can't do anything. Because of that, we figured the best way was to create a project office for the North Cone. We cornered SEDAPAR, but they lacked funding, there was no budget for water projects. So we came up with a plan in which the mining company Cerro Verde would pay for Arequipa's second water treatment plant as part of their social responsibility pledge. (Santiago, personal communication August 18, 2011)

As for the North Cone Special Project Office, "The office existed until 2006, but fulfilled its function only for a sector, only because of pressure and the strength of

FREDICON. Many people do not know that, we know because we have been part of it" (Santiago, personal communication August 18, 2011).

The story of the creation of the North Cone Special Project Office is the story of how a social organization, whose activities were often considered illegal or contrary to good civic behavior, was able to claim the right to habitation and livelihood (Chatterjee, 2004,). Public agencies like SEDAPAR recognized that squatter populations have some claim to their right to water but failed to act upon those claims. In the case of SEDAPAR, the first possible reason that the claims are not acted upon is the lack of financial sources. However, when digging further, one cannot help but ask: Why was the North Cone left out of Arequipa's Sanitation Master Plan? Chatterjee (2004) pointed to the idea that for state agencies to treat claims by political society "as rights would only invite further violation of public property and civic laws" (p. 40)

Political society, like FREDICON, mobilizes to secure the benefits of governmental programs for the poor and underprivileged populations. Political society relates to the state in a relationship framed by their needs and the responsibility of the state to serve their needs. In many regards, their relationship invokes an assistencialist communal relation, by which the underprivileged group asks the state for support, help, assistance, etc. They do not act as rights-bearing citizens. After a successful mobilization and the people secure benefits, Chatterjee (2004) asserted that "one could claim that there is an actual expansion of the freedoms of people, enabled by political society that would not have been ordinarily possible within civil society" (p. 66). Civil society would not make use

of the besiegement of power or of illegal interventions. At the same time, it is prudent to say that "no story about political society is a simple story with a happy ending" (Chatterjee, 2004, p. 67).

Besieging the Provincial Council in 2003. In 2003, after a series of setbacks and negotiations, little progress was being made. At this point, there was an organized march. As Alberta recalls:

> In 2003, we marched to protest the unwillingness of [state] institutions to comply with our demands. We went to the Provincial [Municipality] that was situated in the Plaza de Armas. They were not listening to us. Our leaders were not coming out of the Municipality. We were very tired. Around mid-day the sun is strong and I had a group of mothers with their babies on their backs, others with their children walking or carrying them under the burning sun . . . so what did I do? I climbed to the second floor of the Municipality using a ladder. We would always bring ladders with us. Ladders were laid on the walls of the Municipality, for the sake of it. We did not think we would use them to take over the Municipality . . . . But no one was coming out and I was worried for my people and all the people who were there. So I climbed the ladder and from the second floor balcony of the Municipality I began to speak. That was my first occupation—the first time I climbed the ladder. (personal communication August 22, 2011)

This event, for Alberta and the people she was representing, stood for much more. The ladder itself was a symbol of how far they had climbed in their quest for rights. As Alberta recalled:

> The ladder was like a symbol to us. We used to speak standing above the ladder so that all the people could hear us. They never thought I would climb the ladders to break through the Municipality. But it was such my frustration, I remembered how bad the secretary would treat me, public officers would treat us bad. They were talking by the phone, they would not realize that we were wasting our time that we were hungry, and so many hours . . . so I climbed the ladder. I climbed quickly and many of my female comrades (compañeras), followed me and climbed. I started talking from the balcony. "Listen comrades, if the bad public officers do not pay attention to us when we come in order to get a procedure done, they make us climb, they tell us to come back tomorrow or the day after. How much money do we spend on this?" I said. Then I went inside the Municipality in search of our leaders. A group of women followed me. "What are you doing here? How did you enter?" asked Santiago, Fernando and Edmundo (leaders of the FREDICON). "I climbed the ladder" I responded. "You could have gotten killed!", "How am I going to get killed? I'm used to it!" I thought they were going to scold me. But instead they laughed. We slept there that day. We took the Provincial Council. They had to listen to us, they had to assist us, they had to give us water pipelines, they had to support us, to help us. (Alberta, personal communication August 22, 2011)

Water in the North Cone, would not be a reality if it were not for the perseverance of social organizations like FREDICON. Autonomy, resistance, and defiance characterized the spirit of FREDICON, a social organization whose everyday practices and discourses transformed the social, material, and environmental conditions in which they live. Their will to live a decent life helped them find the way to a reality of decency. Whether the path towards livelihood was illegal or not did not matter to them. What mattered was having the strength to resist and the will to mobilize. "Legality for us does not mean anything. What matters is the social aspect" says Santiago, and "What is legal, is not always just" (personal communication, August, 2011). Every piece of pipeline planted in the land, each one of the reservoirs built on the mountains, every connection tube, and each one of the water taps symbolized a struggle.

The struggle to raise the water tariff. SEDAPAR's state of insolvency precluded them from maintaining and expanding water connections in Arequipa in general but more precisely in marginal, urban areas such as the North Cone. FREDICON fought to obtain financial resources, project approval, and materialization of the water system. As discussed in a previous section, due to FREDICON's pressure, SEDAPAR was forced to open the North Cone Special Project Office. However, no budget was available for this office and it was left to FREDICON to find financial resources. SEDAPAR also endured very low popularity and was constantly under attack for corruption and charges for political briberies. A financial and legitimacy crisis hit SEDAPAR. In 2002, SEDAPAR requested a water tariff increase approval from SUNASS in the form of a five-

year financial plan (2002-2006). A year later, and after conducting public audiences and a detailed investigation on the matter, SUNASS denied the request and cited that the "financial plan contained irreparable deficiencies" (*El Peruano*, 2003; Resolution No. 017-2003-SUNASS-GG). Due to SEDAPAR's critical financial situation, the denied request was a major disappointment and setback. SEDAPAR had to find another viable solution in order to survive.

Already by 2003, FREDICON and many other social, civic, and labor organizations in the city had identified water service deficiency and water contamination as major urban problems. With only one wastewater treatment plant covering 10% of all sewage, Arequipa's wastewater system was in state of collapse. Marginal, urban areas such as the North Cone not only lacked clean water, but were enduring environmental health threats from contaminated water and trash. Since SEDAPAR's work was unreliable and insufficient, social organizations agreed to search for solutions to the problem.

In assessing the problem, the large-scale, open-pit copper mine Cerro Verde stood out because of the amount of water it consumed and the environmental risks it posed. In 2003, Cerro Verde announced it was expanding its production into copper concentrate, which required more water rights for its lixiviation process and tailings dam. The need to assess the environmental impacts of the copper concentrate expansion soon became evident. In 2004, FREDICON sent the first notarized letter to Cerro Verde Mine Corporation and asked for an informational session and documents regarding mitigation of environmental impacts produced by the tailings dam. At first, the mine responded politely by

inviting FREDICON's leaders for a field visit and shared with them part of the expansion's Environmental Impact Assessment. However, following many exchanges, finally the mine interdicted the independent soil study proposed by FREDICON's specialists and prohibited one of FREDICON's leaders from entering a meeting. The communication with the mine was at a standstill. On February 23, 2005, FREDICON proceeded to denounce the mine before the crime prevention district attorney office in order "to prevent the crime of contamination and defend life" (Nro. 0149-FREDICON-2005). The next day, FREDICON led a march toward the mine in order to plant trees "in defense of life and the environment" (Nro. 0149-FREDICON-2005).

As the conflict with the mining corporation escalated, SEDAPAR struggled to survive. A tariff increase was absolutely necessary if SEDAPAR was to remain solvent. SUNASS advised SEDAPAR to present a new, viable financial plan. Conflict with the mine reached an end in 2006 when state government officials joined social, civic, and labor organizations for a massive mobilization against the mine (Chapter 4 will elaborate on the story of the conflict). Eventually, the conflict was resolved through a negotiation in Lima in which the mine agreed to pay for the studies of the potable and wastewater treatment plants needed in Arequipa, and they also agreed to build the second potable treatment plant for Arequipa. Finally, there was money to invest in a water infrastructure. In 2007, SEDAPAR presented a 271 million soles financial plan. At the time of this request, though, the organization had financial support from Cerro Verde Mining

Corporation who contributed 103 million soles and they had the popular support of FREDICON.

FREDICON agreed to support SEDAPAR's financial plan as a strategy to benefit from hydraulic investments. Water tariff increment was and remains very unpopular in Peru, and FREDICON knew that. They also knew SEDAPAR was decapitalizing and that the shareholder board composed of local Mayors would never allow for the raising of tariffs. Santiago gave a broader picture for the issues surrounding the tariffs:

> They could not even repair one single pipeline. They were making water! Which is a popular saying meaning bankruptcy is imminent. What did we do? We went to SEDEPAR and we asked them: what can we do for you to have money? They said: raise water tariffs and we will include La Escalerilla wastewater treatment plant for the North Cone in our financial plan. Okay, leave it up to us! We started a water increment campaign. We fought against many popular organizations that were in disagreement. We claimed that tariff should be leveled; water should cost what it should be. (Santiago, personal communication August 18, 2011).

SUNASS organized a series of public audiences and a forum to figure out public opinion with regard to tariff increment. The public audience's evaluation report observed that "beneficiaries of water service expansion projects in higher areas of the city agreed to tariff increment because they believe it would bring improvements" (SUNASS, 2007). There were a lot of people who disagreed that tariff increases would lead to improvements. Santiago explained that "there were

a lot of quarrels during these audiences, between those who supported and those who disagree with the tariff increment. Sometimes there were even real fights" (Santiago, personal communication August 18, 2011). Essentially, the ones who had water did not want to pay more and the ones who did not have water wanted the tariff raised so that SEDAPAR could extend water service.

By 2008, SUNASS concluded that SEDEPAR complied with 85% of the evaluation and therefore was sanctioned to execute a tariff increase under the new financial plan. Starting July 2008, the water tariff increased by 3.13% per cubic meter in each one of the distinct tariff categories, which signified an increment of 9 to 22 new soles cents per monthly bill. FREDICON considered the raise a success. They had won the battle; however, they now wanted SEDAPAR's reorganization. By the end of the year, FREDICON went on a hunger strike and demanded the reorganization of SEDAPAR. Santiago explained why FREDICON fought for SEDAPAR's reorganization:

> We asked for the total reorganization of SEDAPAR. All the effort we put into obtaining a budget for them, looking everywhere for money. And they start treating our leaders badly? They started feeling puffed-up, authoritarian, and delayed feasibilities, delayed the supervisions, and would not approve our water projects. The North Cone Project Office had disappeared so would not assist us like before. They would invent stories in order to delay water projects. It was really frustrating to observe the reservoirs filled with water but knowing we could not use them. All that

> effort for nothing? It was illogic [sic]! (personal communication August 18, 2011)

They continued to complain in 2009, and occupied SEDAPAR's building while protesting the organization's failure to implement water tariff regionally and for not investing in water and sewage infrastructure (Ideeleradio, February 11, 2009). Santiago had firsthand experience with the events at that time:

> In 2009 we surrounded SEDAPAR… For more than 10 days. Like jinx we surrounded all of SEDARPAR and sat there. All of Arequipa supported us. They said: good that FREDICON surrounded those rats! We managed by force to make members of the shareholder board hear us. We wanted to re-organize SEDAPAR. We achieved an agreement with the shareholder board that supported our call for SEDAPAR's re-organization. At the end none of this was done. They changed the general manager and forgot. However they resolved our problems. This served for them to expedite all and then we did not have much to protest and forgot about the reorganization. You have to ask for the highest demand in order for them to resolve smaller ones. Now we will go to shout at SEDAPAR's officers to get our projects expedited. (Santiago, personal communication August 18, 2011)

As Santiago's account indicates, in the face of indifference from the public sanitation company, FREDICON besieged state institutions, which represented the sequestration of power. Over time, FREDICON took control of the main actors in charge of making decisions in the realm of water service. By doing so, it

created panic and fear. State agencies feared not only for their safety, the safety of their employees, and the safely of the state's infrastructure, but more so they feared the reduction of their popularity—all the people protesting in front of their offices represented electoral votes to SEDAPAR's shareholder board comprised of local mayors. At the end of the conflict, SEDAPAR's inability to meet minimum water service requirements or to propose solutions ahead of problems left FREDICON little choice but to interact with all water governance's main actors. One private actor, the transnational Cerro Verde Mining Corporation, became a crucial economic player in the quest for water justice.

Conclusion

This chapter focused on how urban squatters understood power and rights in the context of water governance regarding water provision in the city of Arequipa. Autonomous organizations comprised of urban squatters in the North Cone, such as FREDICON, interacted with Peru's postcolonial state as populations in need of social welfare, not as rights-deserving citizens. In light of Peru's state coloniality of power (Quijano, 2000), urban squatter organizations organized to demand water as political society (Chatterjee, 2004). In doing so, they challenged the hegemony of the modern political theory of the nation-state and law. Circumventing structural obstacles ranging from land tenure rules to regulations to racial discrimination, they decided to fight for their livelihoods. They constructed a discourse and practice of their right to water, framed by a twofold relationship. On the one hand was the state's obligation to provide or meet their water needs. And on the other hand was the understanding that water is

a basic necessity and they would fight for that right even when it was thought of as impossible to achieve.

The Peruvian state, in the form of local, regional, national institutions, or in the form of the public water provider SEDAPAR, did not treat the poor and underprivileged as citizens. By speaking near urban squatters (Minh-ha, 1989), this chapter has illustrated how the Peruvian state established a political society relationship with squatters from the North Cone. From one perspective, local and national authorities related to urban squatter organizations such as FREDICON in an instrumental way both as useful voters and as a population in need of welfare, which in a sense established a patron-client relationship. FREDICON, on their part, were not victims of state authorities. Instead, they also forced the state to provide what they needed to live a decent life. From another perspective, public water provider company SEDAPAR has failed to deliver its basic mission as a company, which is to provide water and sewage service to all of the city's inhabitants. This failure is attributed to SEDAPAR's insolvency, reducing the situation to an economic issue. However, when looking more in-depth at North Cone issues as a whole one cannot help but notice race and class segregation.

As the frustration and of the poor squatters grew in the midst of facing water deprivation, water shortages, and water contamination, they organized to find a solution to their problems. As this situation unfolded, the transnational copper mining corporation Cerro Verde emerged as a key political actor in the governance of water. Their involvement was in large part due to its interest in water quantity, in acquiring more water rights, its potential risk to water quality.

Urban squatter organizations were forced to undertake direct political relations with the mining corporation in order to fight for water and for decontamination.

CHAPTER FOUR

THE RISE OF CERRO VERDE MINE IN THE GOVERNANCE OF WATER IN AREQUIPA

"One day a Greenpeace advocate visited a phosphate mine in Brazil and while looking at the mine felt very sad and frustrated. At the same time the owner of the mine told him: isn't it beautiful? He then realized there was something wrong in their perceptions, how could it be that they felt so different?" (FCX mine representative referring to Patrick Moore's book Confessions of a Greenpeace Dropout).

"We have a volcano that's been decapitated by nature, and we're mining the esophagus, if you will" (Jim Bob Moffett, FCX CEO and, current Chairman, 1997 as cited in CorpWatch).

Figure 11: Open Pit on Cerro Verde mine site. Photography by Author, taken July 2009.

Back in 2009 I remember attending a seminar on environmental engineering at Arizona State University. The day of the seminar, the classroom was packed with students from engineering and sustainability schools. The title of the presentation read: "What they don't tell you about Environmental Engineering." I remember thinking, "What do they tell you? How could a socio-

cultural researcher like me know?" I was ready to be initiated into "the science of engineering." An engineering professor briefly introduced the speaker and the seminar began. After talking about an engineering expansion project in the Panama Canal, the presenter switched to a second case study in Peru. The speaker told us the story about a water infrastructure project, specifically a potable water treatment plant being built by the Cerro Verde mine, subsidiary of the U.S. based transnational corporations Freeport McMoran.

Freeport McMoran Copper and Gold Inc., also known as FCX moved its headquarters to Phoenix from New Orleans in 2007 after acquiring the mining firm Phelps Dodge[14]. With this acquisition, the Cerro Verde copper mine in Peru became part of FCX assets. I was not that familiar with the Cerro Verde mine. For the past several years, I had followed the news on socio-environmental conflicts related to mining in Peru, but Cerro Verde did not particularly stand out. For half an hour the speaker, an engineer from FCX, talked about "the partnership for clean water in Arequipa, Peru" in which water and wastewater treatment facilities were being constructed by a public-private partnership between Cerro Verde mine and the Peruvian government. After telling us a story of how the representatives from FCX got Peru's President Alan Garcia to intervene in a complicated situation with a local mayor in Arequipa, the speaker went on to talk about Peru's third world burden. "In third world countries regulations are not enforced. In the U.S., policies are very regulatory. We would not pay for a water treatment plant in the U.S., but in third world countries like Peru it is possible," said the speaker

14 http://www.fcx.com/company/history.htm

(seminar, September 2009). There I was, a Peruvian graduate student listening to the views of an U.S. mining firm representative about my country's government. I found out I came from a "third world" country that did not enforce regulations; therefore it was treated differently from other "strong regulatory" countries. I sensed a paradox inherent in these statements that needed to be disentangled.

As in Chapter Three, this chapter is about with changing state-society-nature relations in the governing of water in Arequipa. However, instead of centering on the relationship between political society and water, it centers on understanding the mining corporation's relationship with water. With the privatization of the mining sector and the implementation of market-based mining investment incentive policies in the early 1990s, the exploitation of metallic minerals in Peru increased significantly resulting in a mining boom (Bebbington, 2009; Bridge, 2004; Bury 2005; Glave & Kuramoto 2002; Li 2009). The increase of mineral extraction brought with it the exacerbation of social-environmental conflicts (Defensoria del Pueblo, 2007). From the total number of water conflicts in 2010, 80% of them were in relationship to the mining industry (Red Muqui, 2010). One particular example is the conflict between Cerro Verde mine, political authorities, social organizations, and the local water service provider, SEDAPAR, in the city of Arequipa (Defensoria del Pueblo, 2010). What does water injustice look like in an urban mining context? By focusing on this case study, this chapter examines the mining corporation's perspective on the meaning and practice of water, as part of a broader objective of figuring out if water justice can be achieved in an extractive industry context.

In order to analyze the struggle over water in Arequipa and the process by which the mine[15] acquired influence in Arequipa's water governance, we need first to understand the mining corporation's meaning and practice of water. Unstructured and semi-structured conversations with mining officials, ethnographic fieldwork, and information from secondary sources were crucial in the construction of this chapter. Similar to an analysis conducted by Budds and Hinojosa (2012) in southern Peru on the politics and power relations that underpin the mine's relations with water, I try to make sense of how the mining corporation's discourse, use, and decisions about water shape the politics and scale of water governance in Arequipa.

This chapter is divided into four sections, each of which will be making an argument that helps support my claim that mining companies' relationship with water shapes the politics and scale of water governance. The first section begins with a general discussion of the meaning of water from the perspective of the transnational mining corporation, Freeport McMoran and it ends with the specificity of Cerro Verde mine's water demand and management. Here I make the argument that, the mining corporation specifically tied the meaning and practice of water both to their business and an economic cost-benefit valuation of water (Barrett, Moran & Cote, 2010; Davis & Franks, 2011).

15 Although, one can argue that Cerro Verde Mining Corporation (SMCV) and Freeport McMoran are different companies, I sometimes refer to FCX and Cerro Verde mine being as one in the same. In those cases I labeled it under a general category such as mine, mining company, or mining corporation. When I want to differentiate between them I will specify their name.

The second section presents the mine's position towards the politics and scale of water governance in Arequipa. Understanding how the mine viewed the politics and scale of water governance will illuminate my analysis of the implications of its role in water governance in Arequipa. My argument here is that, the politics and scale of water governance for the mining corporation extended beyond the state's administrative structure or natural watershed boundaries. This ties to David Harvey's (1982; 2003) idea of the spatial fix, and to Budds and Hinojosa's (2012) argument that "although water used by mines is local to the mine, many of the ways in which that water is defined, used and governed take place over wider spatial and temporal scales" (p.102).

The third section centers on analyzing the meaning of water rights for the mining corporation. I argue in this section that, the meaning of water rights for mining corporations, such as FCX is rooted in economic value—water as a commodity. The economic valuation of water rights stimulated an accumulative nature, by which the mining corporation was prone to buy, lease or produce water rights by dispossessing others from this right (Harvey, 2006; 2009; 2010). What is different about this case is that we find a mining corporation working on providing clean water and sanitation services for the poor. Although this can be viewed as fulfilling a human rights dimension of water, I find this dimension is not connected to the mine's discourse and practice.

The fourth section, and final section, expands on the idea that water is not only a commodity but also embedded in political and social relations. Therefore, Freeport's politics of social responsibility and tax/rent contributions are crucial

for understanding the role the mine plays in water governance. In this section I analyze in what ways the mining corporation's meaning and practice of water were tied to specific social and environmental concerns. My analysis is rooted in the idea that water is not just a material substance but as geographer Eric Swyngedouw (2004) describes it, water has a "hybrid nature" embedded in social relations. This means I investigate how water's meaning and practice affects the mining corporations' social and cultural processes (Linton, 2008, 2010; Loftus, 2006, 2007, 2009; Swyngedouw, 2004). When looking at the specific social and environmental implications of water management for mining corporations we find that these are handled technically, meaning through public relations and social corporate responsibility.

Water and Transnational Mining Corporations: The Case of the Cerro Verde Mine

"The main problem in Arequipa is water," said the seminar speaker at the engineering conference. "Water in the area is scarce and the main source of it, the Chili River is severely contaminated. This situation is also a problem for the Cerro Verde mine since it depends on water from the Chili River for mineral extraction" (seminar, September 2009). Because of all of the above and because FCX is a "good business" they agreed to help finance water treatment infrastructure for Arequipa. "This is a win-win situation" explained the seminar speaker. During the question and answer section, a professor from the School of Sustainability asked about the real intentions behind the mining corporation's involvement in water service infrastructure in Peru (seminar, September 2009).

The speaker replied by saying that the mine would not have gotten involved in this project if it were not in the mine's best interest. In Indonesia, for example, FCX built an entire city because they need a place for their workers to live since the mine was situated in an isolated area. In Arequipa there is no need to build a city since the mine is next to one. Instead, they can afford to build a potable water treatment plant. I found it really interesting to hear a transnational mining corporation's logic behind the decision to finance a water infrastructure project in my country. I wanted to learn more about the mine's relationship with water in the city of Arequipa.

Figure 12: Potable Water Treatment Plant Construction Site. Photography by Author taken July, 2010

For a mining giant like FCX water is an indispensable production input. In using water for a complex set of activities such as processing and transporting of ore and waste, minerals separation, dust suppression, washing of equipment and human consumption, the mining industry faces many environmental and social challenges (Bridge, 2004; Franks, 2007; Franks et al., 2009; Kemp et al., 2010;

Loeb, 2007). Producing 10 percent of the world's copper, nearly 1 percent of gold, and the largest amount of molybdenum in the world[16], Freeport stands out as the world's biggest copper company (Shameen, 2009). With four copper mines in South America, Cerro Verde is distinctive as a very efficient and low cost operation for FCX (Seeking Alpha, 2010 Q2; 2011 Q1). In 2010, Cerro Verde produced 49 percent of FCX's South America copper and 10 percent of all FCX's production of molybdenum (FCX, 2010a). This level of production was possible thanks to a major expansion during 2006-2007. "The real story though", as stated by Freeport's CEO, Richard Adkerson, during Earnings Conference Call for the first quarter 2012, "is the opportunity for [another] major expansion… tripling production to 360,000 tons per day" (Seeking Alpha, 2012 Q1). If, Cerro Verde were to proceed with a second expansion (currently under the preliminary stages), it would become one of the largest mining operations in the world, producing 600 million pounds of copper (Seeking Alpha 2010 Q2; 2011 Q2). This most recent expansion required supplementary water rights.

When researching Freeport's water policy it was difficult to find a standalone document on the matter; instead there were numerous documents that mention the importance of water for the corporation. At the corporate level, four documents stand out; three because of their direct engagement with water and the last one because it contained the perspective of FCX's executive officers. First was Freeport McMoran's Annual Sustainable Development Report. Second was Freeport's annual Tax Form 10-K Report. Third was the Carbon Disclosure

16 Shameen, November 16th 2009 and http://www.fcx.com/company/who.htm

Project (CDP), which required an annual water disclosure information report. And fourth, transcripts of FCX's every quarter of a year earnings conference calls, available online through Seeking Alpha website. Regarding Cerro Verde's water system specifically, a series of documents, all produced by Knight Piesold Consulting, provided important information: the Primary Sulfide Project's Environmental Impact Assessment (EIA) (2004), the Management Environmental Plan for Solid Waste Disposal for SMCV's Freshwater System (2006) and the Complimentary Freshwater Treatment System (2008).

At the corporate level, the three documents mentioned above indicated the importance of water in mining extraction. The 2010 Sustainable Development Report stated, for example, the importance of water for their business since "water supply shortages could require [them] to curtail mining production and/or prevent [them] from pursuing expansion opportunities (FCX, 2010b, p. 33). In their 2011 CDP water disclosure report, FCX indicated that, "certainty of water supplies and water quality are identified as key sustainability challenges of our business" (FCX, 2011b, section 1.1a). Both of these documents stressed the uncertainty of water availability and the need therefore of securing water sources. In order to evaluate water supply and quality, FCX created the company's Water Management and Conservation Task Force comprised of a group of senior employees from different professional disciplines, who in charge of identifying water management projects and developing water management/conservation plans (FCX, 2010b). FCX admitted that "although each operation has sufficient water rights and claims to meet current operational demands, it is not possible to predict

the possible outcome of future legal proceedings or regulatory changes" (FCX, 2011b, section 3.1a). Therefore FCX feared "temporary water supply shortages in Cerro Verde are possible and could affect operations as currently planned therefore [they] are conducting water studies to assess opportunities for additional [water] supplies" (FCX, 2010a, p.45).

Water supply for Cerro Verde comes from two main sources. The main portion is derived from surface water coming from the regulated Chili River system, which is formed by a series of storage reservoirs on the Chili River watershed (FCX, 2011a). A lesser portion comes from groundwater emerging from the Cerro Verde and Santa Rosa open mine pits (Knight Piesold Consulting [Kinght Piesold], 2004, p.RE-4). Each year, rainfall on the mine's operational area feeds the aquifer system through infiltration, which eventually flow through the Tinajones and Enlozada gorges to the Chili River (Knight Piesold, 2004, p.57). Cerro Verde's EIA notes that

> Due to the arid location of the project (40,7 mm/year precipitation), even though a high potential for acid generation might exist, scarce precipitation limits acid rock drainage's potential. Nevertheless, this cannot be quantified easily and due to limited specific site information is not included in this report. (Knight Piesold, 2004, p. J Annex IX)

This statement is odd because it is well known that "failure of tailings or waste rock dumps facilities can devastate local water endowments upon which local communities rely" (Kemp, et al., 2010, p.XX). However, it is even more worrisome since for the past two years, precipitation has drastically increased

during the first months of the year placing Arequipa in a state of emergency due to flood risks (*El Comercio*, 2011a; 2012). It is still uncertain how precipitation increases could affect water sources at the mine site.

When mining officials from Cerro Verde were asked about the mine's impact on water quality, they referred to the fact that Cerro Verde is a zero-discharge facility and recycles approximately 85-90% of the water used in the process (FCX officer, July 2011, personal communications). In saying this, mining officials contend that there was hardly any water contamination. Fresh surface water coming from the Chili River was treated for its high solids concentration (Knight Piesold, 2008). The mine has two water treatment plants, a small wastewater treatment plant and a potable water treatment plant. Treated water from these plants was re-used for dust control (Knight Piesold, 2004).

> Our business and corporate philosophy centers on sustained development, so for us water means precisely sustainability in two aspects, [first, it means] business sustainability because it [water] is a key input for the mining process and second it means sustainability from the perspective of the city of Arequipa, in terms of electrical generation, human consumption and agriculture (SMCV officer A, personal communication 08-25-2011).

As this quote illustrates, water for Freeport was essential for their business since a shortage could "curtail mining production" or "prevent future mining expansion projects" (FCX, 2010a, p.45). However, in addition to this view, water for this mine representative also meant using it for consumption, as well as for power and agricultural production. The use of the word "sustainability", in his speech

becomes tainted with an economic understanding. In this regard, water was considered a fundamental economic resource. In fact, mining experts from the University of Queensland's Sustainable Minerals Institute, attested that water cost and availability as well as energy supply would be fundamental in the future (Franks et al., 2009). For this reason, FCX was constantly looking for ways to implement new water projects that would benefit their business.

Cerro Verde's Power and Scale in Water Governance

When analyzing FCX's corporate and local water politics, it was useful to highlight three main aspects. First, water politics was tied to energy politics. Second, the mine's scale of water governance went beyond that of the state's administrative structure and natural watershed boundaries. Third, as Cerro Verde expanded its mineral production, it found ways to increase its water and energy intake through the construction of inter-basin transfers, dams, reservoirs, and wastewater treatment plants. These infrastructure projects had social and ecological consequences on places that were distant from the mine.

To understand how water politics were tied to energy politics, it is important to note that water rights during Cerro Verde's sulfides ore expansion were negotiated side-by-side with access to hydroelectric power. Indeed, FCX's corporate documents state that in order to obtain additional water rights and access to hydroelectric power for their 2006 mill expansion project and expand storage capacity in the watershed, they constructed the Pillones and Bamputane reservoirs (FCX, 2010a, p.45; FCX, 2011b, section 3.1a). Cerro Verde negotiated an agreement in 2004 with Arequipa's Power Company, EGASA in which

EGASA agreed to provide Cerro Verde 60 megawatts per year from 2007 to 2015 and in exchange, Cerro Verde agreed to finance the Bamputañe dam (SMCV, 2011). Four years later, in 2008, EGASA and Cerro Verde signed an addendum to their 2004 agreement admitting construction costs for the Bamputañe dam had been more than expected and agreeing on providing Cerro Verde a flat rate tariff for nine more years (SMCV, 2011). This was not the first time Cerro Verde negotiated deals with power companies: in the past, they signed a deal with Electroperu for 110 megawatts from 2006 to 2010 (Equilibrium Clasificadora de Riesgos [Equilibrium], 2011). More recently, in 2011, Cerro Verde signed a deal with Electroperu in which Electroperu will supply Cerro Verde 340 megawatts of energy for a period of 15 years starting 2014 and Cerro Verde, in exchange, would construct the 200 megawatt San Juan thermal power plant (Equilibrium, 2011; SMCV, 2011).

> …there is a very important aspect associated with water that is energy generation. Peru is one of the few countries privileged in the world, in South America there are a few. Our geography allows us the possibility of generating energy from hydroelectric waterfalls. This is a very important aspect, thanks to these [dam] investments and works, [the city of] Arequipa has been able to develop as it has in recent years, without it would have been absolutely impossible (SMCV officer A, personal communication 08-25-2011).

Regarding the mining corporation's politics of scale in water governance, there are two main points. On the one hand, as shown in Chapter Two, it supports

Budds and Hinojosa's (2012) argument that mining corporations' water governance scale extends beyond the watershed scale unit to include bringing water from other watersheds or even from the ocean. Under Peru's new Water Resource Law (Ley de Recursos Hidricos) (2009), the scale of water governance consists of the watershed/basin unit. Therefore, while not denying water governance on the scale prescribed by the Peruvian state, Cerro Verde's water governance scale often defied that of the state. On the other hand, it challenged the state's administrative structure concerning water management, because it included other informal water management spaces such as the Multisectoral Committee. The Multisectoral Committee, as described in Chapter Two, is an informal decision-making water institution grown out of frustration from failed water regulations and the crippling of the state's water institutional framework in which the mining corporation played an important role.

At the corporate level, Freeport indicated in their 2011 CDP's water disclosure information report that they were looking into constructing desalination plants and pipelines on the Pacific Ocean to convey water to their Candelaria and El Abra mines in Chile (FCX, 2011b, section 1.2; section 3.1a). Following Harvey (2003), the construction of desalination plants can be seen as a technical and spatial fix. In addition to transferring water from other watersheds or from the ocean in order to acquire more water and eventually more rights, Freeport also used reclaimed water from wastewater treatment facilities. As cited in their CDP report (FCX, 2011b) "FCX has identified utilization of wastewater currently discharged to the Chili River from the City of Arequipa as being a viable

alternative to provide reliable water source for the future needs of its mining operation" (section 1.2). This alternative is currently being proposed in Peru's Cerro Verde mine and used in Chile's Candelaria mine (FCX, 2011b, section1.2). Moreover, experts in the Center for Water and Minerals Industry in the University of Queensland's Sustainable Minerals Institute, claimed that a future solution to limited access to water for mineral projects would be to consider a water market that would allow trading of mine site water (worked water) from a wetter to a drier mine (Barrett, et al., 2010).

Given that the Chili River watershed cannot provide sufficient water for all its users, water is transferred from the Camana Majes watershed (see Map 15). Peru's new Water Resource Law (2009), assigns the watershed/basin scale as the basic unit of water governance and mandates the creation of Watershed or River Basin Councils (Consejos de Recursos Hidricos de Cuenca), which have jurisdiction over contiguous and undivided watershed units. These Councils, formed by water users from the respective watershed, are in charge of overseeing their jurisdiction. The question of whether the Chili-Quilca and the Camana-Majes basins should make up one Watershed Council was debated extensively (field observations June-September 2011). At the end, the National Water Authority resolved not to unite both watersheds into one Watershed Council, but instead form two different Watershed Councils with a "special management area." It is uncertain in practice how the "special management area" will be treated. Currently, there are three different water institutions that in one way or another make decisions over this "special area." These are: 1) the Autonomous Majes

Authority, AUTODEMA, 2) Arequipa's public electric provider, EGASA, and 3) the Multisectoral Committee. Not only was the mining corporation a key member of the Multisectoral Committee, but as EGASA's investment partner it played a crucial role in the water management decisions EGASA maked in this area. This fact challenged both Peru's administrative structures and the physical boundaries that characterized most instances of water governance (Budds & Hinojosa, 2012). This confirmed geographers Budds and Hinojosa's (2012), Cohen and Davison's (2011) and Norman and Bakker's (2009) research that not only are water and its governance politicized but in addition, the scale of water governance is socially and politically ascribed.

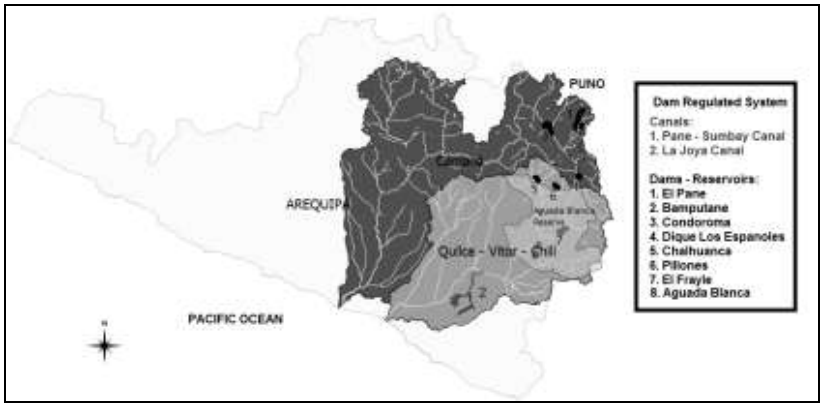

Figure 13: Regulated Hydraulic Infrastructure System. Map adapted and drawn by author.

Finally, the construction of new infrastructure and hydraulic works in order to bring water to the potential mine site had social and ecological consequences on places that were distant from the mine. "Both the extraction of water and the disposal of waste products through water can happen in locations that are distant from the mine itself, and thus can impact people and places that are not directly affected by mining" (Budds & Hinojosa, 2012, p.120). If we

follow Harvey's (2001) explanation of the spatial fix, then not only did capitalism need to transcend geographical or technological boundaries in order to move freely in the market, but in doing so its social and environmental repercussions also overcame space. In this case, the construction of the Pillones and Bamputañe dams had direct consequences on people and nature inhabiting the upper parts of the Chili River and the Camana Majes basins both located quite a distance from the mine. The Pillones dam, for example, is located within the Salinas y Aguada Blanca National Reserve (INRENA, 2004). For the construction of this dam, the Pillone village was flooded (Knight Piesold, 2004). The entire village as well as local Andean rodents such as vizcachas had to be relocated to a nearby area[17] (EGASA 2006; SNMPE, 2005). According to a Professor from the National San Agustin University in Arequipa who has visited the area,

> Environmental impact assessments (EIA) were so badly conducted that local population has preferred to re-build their houses on an upper area than to live where the specialists had determined would be best. A social-anthropological study was not conducted; engineers were the ones who elaborated the EIA. The only infrastructure used in the relocated village is the school; however the communal center, the library and houses are abandoned" (personal communication, July 25 2011).

Social and environmental impacts on places far away from the mine are seldom discussed or studied in relationship to extractive processes taking place in distant places. In this case for example, since the Cerro Verde mine is located at the

17 http://www.snmpe.org.pe/pdfs/Memorias/Memoria-Anual-2005.pdf

middle ranges of the Quilca – Chili River basin it is assumed that its social and environmental impacts will center on areas adjacent to the mine or downriver. However, as the previous paragraph demonstrates the mine can also impact distant upstream places.

Water Rights as Economic Assets

Water rights are essential for copper production. At the corporate level, it is clear that water rights are "valuable assets" (FCX, 2011b). In order to acquire these "valuable assets," Freeport employed a variety of strategies. These varied depending on the specificity of the local context, state regulations, and cost-benefit analysis. I will discuss how the mining company used these strategies and how they interacted with questions of justice, with three different examples. The first example deals with the strategy of "leasing" and "buying" water rights through the acquisition of ranches in the United States. The second example, specific to the Cerro Verde site, utilizes the strategy of building water infrastructure and/or "hydroelectric developments" and negotiating energy and water rights. And the third example, also specific to Cerro Verde, revolves around building water treatment plants and acquiring rights for reclaimed water.

Freeport views water rights, "as a valuable asset of the Company" (FCX, 2011b, section 5.1a). In the U.S., as stated in the CDP 2011 report, Freeport McMoran leased unused water rights to other private and public entities. This was done in part to protect the legal integrity of the water rights and supports other entities need for water (section 5.1a). The company also claimed that "acquisition of water rights and development of management of new water resources may

require capital expenditures and/or maintenance and legal expenses" (section 5.1a). As an example of this practice, in 1984 the city of Scottsdale bought the Planet Ranch farm for $11.7million to obtain its water rights (Corbett, 2011). Twenty eight years later, in 2011, FCX bought the Planet Ranch water farm from the City of Scottsdale, Arizona. According to *The Arizona Republic* newspaper article (Corbett, 2011), the 8,389-acre alfalfa farm was sold to FCX for $10.15 million in cash and 50,000 acre-feet of water from the Salt River Project. Conservation groups were interested in buying the farm but could not top the mining firm's offer (Corbett, 2011). The newspaper article revealed that FCX will attempt to lease portions of Planet Ranch lands and water rights to the U.S. Bureau of Reclamation, and will transfer some of the Planet Ranch water rights to the company's copper-mining operation in Bagdad [Arizona] (Corbett, 2011)

This strategy of acquiring of water rights through market-based mechanisms strengthens the perspective of water rights as commodities. The economic valuation of water rights supported an accumulation strategy in which the mining corporation sought to buy, lease or produce water rights by dispossessing others from this right. Geographer David Harvey (2006) refers to this as "accumulation by dispossession," which "is about plundering, robbing other people of their rights… much of which is taking away people's rights to dispose of their own natural resources" (Logos, 2006). In the specific example presented above, the mining corporation's economic power ousted conservation groups' attempts to manage, control, and re-signify water at Planet Ranch farm. What was even more serious about FCX's acquisition of the alfalfa farm was the

fact that Arizona is one of the driest regions in the world and there we have a mining corporation accumulating more water rights for future mineral extraction business. This of course is not a new strategy. Already by mid-1990s, activists and scholars Gustavo Esteva, Madhu Suri Prakash (1997) and Vandana Shiva (1997) were denouncing a global economic system that "advanced the concentration and rights of ownership without limit to the exclusion of needs and rights of the many who own virtually nothing" (Korten, 2001, p.9).

For its 2002-2004 primary sulfide expansion project at Cerro Verde, FCX envisioned a water infrastructure plan of constructing new water reservoirs on the Chili River watershed in order to obtain additional water rights and energy supply. Before the approval of this project, Cerro Verde had rights for 0.2 cubic meters per second of surface water and 0.2 cubic meters per second of groundwater. However, after the approval, Cerro Verde ended up with surface water rights for up to 1.16 cubic meter per second (Knight Piesold, 2008). How did this happen? Cerro Verde first signed a deal with Peru's public energy company, EGASA, and constructed two new water dams under a public-private partnership between EGASA and the Cerro Verde mine (Cerro Verde Memory, 2011). Cerro Verde contributed 56% of the total cost of Pillones dam and 100% of that of Bamputañe dam. In compensation for this contribution, Cerro Verde was granted the use of 60% of the Pillones water and an 18-year energy contract with EGASA (Knight Piesold, 2004, p.RE6, Supreme Decree No.003-2004-AG).

This mineral expansion project did not proceed without protests. On the one hand, Andean peasant communities living near the site of the Pillones dam at

the Chili River headwaters felt affected by the construction of this reservoir. Not only were they and their main livelihood, their herds of vizcachas and vicuñas, forced to resettle but in addition, they claimed that there were negative environmental effects as a result of the water project. In the words of the President of the Vicuñas Conservation Association of San Antonio de Chuca:

> One of the main problems in San Antonio de Chuca is caused by the construction of the Pillones dam, water from our community flows to Arequipa and is used by the Cerro Verde mine (using more than 50%), but we don't have any benefit. Through my district trucks pass by carrying corrosive acids used by mines; they are contaminating our environment. We also have the solid waste garbage problem along the road. (Máximo Choque, Presidente de la Asociación de Conservación de Vicuñas de San Antonio de Chuca, INRENA & GPAN, 2007)

On the other hand, social organizations from the city of Arequipa, as well as regional and local authorities, joined forces to protest Cerro Verde's environmental record and the use of a tax stability agreement for this expansion. Following social turmoil in the form of marches and social mobilizations, mine representatives agreed to finance 50% of the total cost of two new water treatment plants: a potable water treatment plant and one for wastewater (Agreement, 2006; Agreement, 2007; SMCV, 2011). Cerro Verde kept their promise by covering the cost and building a potable water treatment plant. This water plant is expected to start working by mid-2012.

The construction of a potable water treatment plant could be viewed as having implications for realizing a range of universal human rights, such as the right to water, to health, and the ability to secure a livelihood (Kemp et al, 2010). Until recently, the human right to water was not a distinct right but was embedded in many human rights instruments. In 2010, the United Nations General Assembly explicitly recognized the right to water and sanitation as a distinct right (Resolution 64/292). This right is specifically tied to the provision of safe, clean, accessible and affordable drinking water (Resolution 64/292, 2010). Although this U.N. recognition is non-binding and there are no means to enforce the mandate, the International Council on Mining and Metals Sustainable Development Framework (ICMM, 2003) requires member companies, such as Freeport, to uphold human rights as indicators of good practices.

For some human rights activists, the construction of the potable treatment plant had the potential of directly impacting the realization of the human right to water since it will provide water to 300,000 people living in the city of Arequipa during its first phase. My research identifies the human rights framework as one of many water rights systems made up of organizational norms and operational rules (Boelens, 2009). From a plurilegal understanding of water rights, one can argue, on the one hand, that the construction of a water treatment plant per se does not guarantee rights. Water accessibility could be prevented if the necessary pipeline system is not put in place. The affordability of water tariffs could be jeopardized through badly negotiated contracts with water management companies. Problems related to weak regulatory authorities, poorly trained public

service workers, and lack of knowledge to negotiate with powerful companies could also hinder rights (Sjolander Holland, 2005). Even the well-known water sector practice of "donating money" also referred as to "bribery" could have negative impacts on a range of human rights (Sjolander Holland, 2005). So far, SMCV does not connect this water infrastructure project to a human rights framework, but instead uses a philanthropic, needs-based or economic development framework as justification (FCX, 2009; SMCV officer A, personal communication, 2011).

On the other hand, even if Freeport had a sincere human rights approach to water, there were nevertheless questions about how "human right to access water would be applied in practice and result in meaningful change on the ground" (Kemp et al., 2010, p.1555). Moreover, my research is situated on a specific standpoint (Haraway, 1991), that of political ecology (Harvey, 2003, 2006; Swyngedouw 2004) and decolonial or post-colonial studies (de la Cadena, 2008; Chaterjee, 2004; Grosfoguel, 2011; Quijano, 2000a; 2000b). Therefore, according to Bakker, in addition "to the longstanding critique of the anthropocentric nature of human rights highlighting that a human right to water access may ironically imply the further degradation of hydrological systems on which we depend" (as cited in Kemp, et al., 2010, p. 1555). My research is wary of the liberal-western-modern framework in which the notion of human rights is rooted (Grosfoguel, 2011), and the real risk of human rights co-optation to justify capitalist expansion (Harvey, 2006). Therefore, I am more interested in mapping the power relations around the meaning and practice of water and identifying

what water rights mean for each social actor, than in promoting a particular view of water justice or 'Rightness' (Boelens, 2009). Following Boelens (2009), I am interested in mapping the "diverse spheres and layers of social justice as negotiated and constructed over time in place-specific settings and power contexts" (p. 310).

The last example of a water rights acquisition strategy concerns Cerro Verde's most recent copper production expansion project which would require, "approximate 85% increase in its water requirements, which means approximately 1 cubic meters per second more of water rights" (FCX, 2011a). In June 2011, Cerro Verde proposed to build a much needed wastewater treatment plant for the city of Arequipa and reuse treated water for their additional expansion requirements. Having elaborated on their Environmental Impact Assessment (EIA) for this new expansion project, between February and March 2012, Cerro Verde organized public audiences to share their EIA findings (*El Buho*, 2012). If Cerro Verde's new water rights acquisition proposal is approved, the mine will hold rights for approximately 2.2 cubic meters per second of surface water. This would also mean that within a period of nine to ten years, Cerro Verde acquired approximately two cubic meters per second more water rights. To date, Arequipa's water and sewer provider, SEDAPAR takes in approximately 1.35 cubic meters per second of surface water from the Chili River to provide potable water for the city of Arequipa (SEDAPAR, 2007). During the first production phase of the new potable water plant, SEDAPAR would be able to produce 1.5 cubic meters per second more of potable water totaling 2.85 cubic meters per

second. The quantity of water produced by SEDAPAR for a population of one million would be very similar to that used by Cerro Verde for mineral production.

Questions regarding the accumulative nature of SMCV water rights acquisition and Peru's state permissive stance arose when analyzing this case. Especially when considering that as a consequence of the 2004-2006 primary sulfides expansion, in the year 2010 SMCV produced 668 million pounds of copper and 7 million pounds of molybdenum generating over $2.4 billion in revenues (FCX, 2011a). However, in addition to these questions there are further implications of Cerro Verde's latest strategy for acquiring more rights. Agricultural associations at the lower end of the watershed such as those in the valley of La Joya claim that Cerro Verde's re-usage of 1 cubic meter per second of treated water would have negative consequences of the amount of water available to water their crops (La Joya farmer, personal communications August 2011).

Water as Political and Social Relations

This chapter treats water as having a hybrid nature: that is, it is embedded in social relations (Linton, 2008, 2010; Loftus, 2006, 2007, 2009; Swyngedouw, 2004). As a socio-natural hybrid, "water in any given context will reflect the material and cultural processes through which water and water issues become formed in particular ways" (Budds and Hinojosa, 2012, p. 120). In this section, I will focus on how the mine shaped water and how in turn the materiality of water shaped the mine's governance decisions.

As mentioned in the Chapter Two, one aspect of the shift from governing water to the governance of water entailed a shift in the role private sector played in the provision of water services and the management of water. To explain this, I have identified four social and cultural roles a private actor such as the Cerro Verde mine played in the governance of water in Arequipa. The first was tied to their rent effect and their relationship with Peru's welfare state. The second was the role they played as high risk source of water, soil and air pollution. Because of this they were required to engage with environmental governance. The third was their role as political lobbyist and establishing good relations with Peru's elites and government officials. And finally, they played a role in economic and sustainable development through their social corporate responsibility programs.

Cerro Verde and Peru's fiscal system. The Cerro Verde mine was one of the first metallurgic complexes privatized in 1993 for $35 million U.S. dollars in cash (Campodonico, 1999). The General Mining Law (1992), passed during Alberto Fujimori's Presidency, offered a series of fiscal and legal incentives such as fiscal stability contracts, a reinvestment program, and other tax exoneration incentives (Campodonico, 1999). In 1996, Cerro Verde proposed a mining expansion project, and in 1999 signed a fifteen-year stability contract with the Peruvian government (Centrum, 2009). This fiscal contract, which served to provide fiscal stability, extended the 1996 tax regime for fifteen years starting 1999. In addition to this, the stability contract offered the possibility of adhering to the reinvestment program allowing the option of reinvesting up to 80% of the mine's non-distributive earnings into capital expansion projects. In other words, the

reinvestment program gave mining companies the opportunity of paying less income tax during the years expansion projects were executed[18]. In the year 2000, Law 27343 repealed the Reinvestment Program prohibiting its use. Mining companies with stability agreements, like Cerro Verde, argued that their stability agreements shielded them from Law 27343. Cerro Verde won their case in 2004, and was granted the approval to use the Reinvestment Program during the construction of their primary sulphides expansion.

One of the most important tax distributive programs in Peru's mining sector was the mining canon. As explained in Chapter Two, the mining canon consists of 50% of the income tax paid by mining corporations that is distributed by the national government to regional and local state governments. Cerro Verde is obliged to pay income/rent taxes therefore, it contributes to regional and local development through the mining canon. In 2004, Peru's government established mining royalties, a compensation paid by mining corporations for the privilege of using a natural resource. Cerro Verde fought hard against the obligation to pay mining royalties arguing their stability contract prevented them from doing so (Seeking Alpha, Q2, 2011; FCX, 2010a). However, when approached in 2006 by President Alan Garcia to participate in the "Mining Program in Solidarity with the People" with a voluntary contribution, Cerro Verde decided to make an additional contribution to regional and local development by means of a newly established Cerro Verde civil association. Recently, in 2011, President Ollanta Humala negotiated another compensation instrument, the "Special Tax program" with

18 Currently, the income tax represents 30% of the mine's distributive earnings.

mining corporations. After analyzing this new fiscal regime, FCX's Chief Financial Officer and Treasurer said that "it did not have a significant impact on our economics at Cerro Verde" (Seeking Alpha, Q4 2011).

> The tax environment will have a big impact on the viability of our project and other projects in Peru. So the tax situation is very important, taxes and royalties and however the government extracts value out of the operations. We have been engaged in discussions about a new stability agreement. We expect that those will continue with the new administration. There had been some very encouraging public comments that Humala has made that they're going to be supportive of development, including consideration of stability agreements. Humala said they will honor past stability agreements. And overall, Peru, we want to maintain its competitiveness as companies consider where to invest and it's got resources that need mining development to continue its progress for alleviating poverty and adding to the economic well-being of the country. (FCX CEO Richard Adkerson, as cited in Seeking Alpha, 2011, Q2)

Cerro Verde does not pay mining royalties. This is despite the fact that in 2005, Peru's Constitutional Tribunal ruled that royalties were compensations not taxes (0048-2004-PI/TC). In 2008, SUNAT, the Peruvian national tax authority, notified Cerro Verde "of its intent to assess mining royalties to the minerals processed by the Cerro Verde concentrator, which was added to Cerro Verde's processing facilities in late 2006" (FCX, 2010a). By 2009 Cerro Verde was noticed it owed approximately, $34 million for the period of October 2006 to

December 2007 and $41 million for the year 2008, and both in connection with its alleged obligations for mining royalties and penalties for the period. Twice Cerro Verde appealed SUNAT's decision to deny the mine's ability to protest this assessment. According to FCX's Tax Form 10-K, the mining corporation will "challenge the royalties because its stability agreement with the Peruvian government exempts from royalties all minerals extracted from its mining concession, irrespective of the method used for processing those minerals" (2010a). This is exactly the point that is controversial: SUNAT and those arguing that Cerro Verde should pay mining royalties defend the idea that Cerro Verde's new primary sulphide project is not part of the tailings dam project under which the contract was signed (Campodonico, 2011).

Despite the fact that Cerro Verde does not pay mining royalties, Cerro Verde's contribution to Peru's income tax revenues is significant. While the mining sector's participation in the collection of internal taxation is 15%, at the income tax level it is higher, currently at around 27% but reaching 43% in 2007 (Loayza Arenas & Hidalgo Suarez, 2011). Observing mining's contribution to the fiscal revenue system in Peru from 2005 to 2010, research analysts from the economic and business journal *Gestion* (Loayza Arenas & Hidalgo Suarez, 2011) indicated that the mining sector contributed about 30% of Peru's total income tax and more than 30% of business's income tax. An interesting fact is that from the mining sector's income tax collection, 90% is concentrated in 10 companies. Moreover, only four mining companies account for 65% of the mining sector's

income tax revenues. Cerro Verde is among those four companies[19] (Loayza Arenas & Hidalgo Suarez, 2011).

The mining sector channels financial contributions to regional and local development not only through fiscal and state compensations, but also through funds coming directly from the mine to the community either as part of their social responsibility or their public relations program. By means of these multiple financial contributions, mining corporations fund water infrastructure projects. As a result of the proliferation of mining contributions into water infrastructure projects, some 33 water service provision companies (Empresas Prestadoras de Servicio, EPS) owe the Peruvian national tax authority, SUNAT approximately S/ 724 million soles[20] in donation taxes (Ortiz, 2012). According to the President of the National Supervisor of Sanitation Services (SUNASS), Jose Salazar, the EPS system is so broke they are not even able to pay donation taxes. This is exactly the case of SEDAPAR, which is not able to pay approximately S/ 60 million[21] in taxes for SMCV's water plant donation (Ortiz, 2012). This situation highlights the precarious financial condition of water service provision companies more generally in Peru and particularly in the case of Arequipa.

Environmental contamination and mining: weak and strong regulatory policies. The extractive industry, by its very nature, has an adverse impact on the environment, and its operations create irreparable harm in terms of water, air, and

19 Other companies include: Antamina Mining Company, Southern Copper Corporation, and Barrick Mining Company).

20 This amount in nuevos soles converts approximately to $ 267 millions of U.S. dollars.

21 This amount in nuevso soles converts approximately to $22 million U.S. dollars

ground pollution (Sethi, Lowry, Veral, Shapiro & Emelianova, 2011). According to FCX's CEO Richard Adkerson, "one of the problems you always have in mining and the natural-resources business is that you can't predict, something always happens that nobody had even seen coming" (Shameen, 2009). Because of this, and paraphrasing Adkerson, mining corporations work to "control or minimize environmental and social risks" (as cited in Shameen, 2009). As an integral component of the environment, water becomes as cited by FCX's CEO, one of the most important "natural resources" that needs to be "properly handled" (Shameen, 2009). Nonetheless, managing the environment is not easy.

As a transnational mining corporation, Freeport deals with possible environmental degradation in many parts of the world. On a global scale, Freeport's environmental record is problematic. One of their worst experiences in terms of environmental practices is located in the Grasberg gold and copper mine in Irian Jaya (also known as Papua New Guinea or Papua province in Indonesia). There, Freeport uses "rivers to help deal with mine wastes" (Sethi et al., 2011, p.3). Numerous academic and journalist investigations have denounced Freeport's human rights and environmental record in Irian Jaya, detailing how environmental degradation and militarization affects the lifestyle and well-being of the Amungme indigenous peoples (Abrash, 2004; Leith, 2003; Macalister, 2003; 2008; Nakashima, 2006a; 2006b; Perlez & Bonner, 2005; Sethi et al., 2011; *The New York Times*, 2006). In 1994, Freeport's Grasberg mine lost its $100 million political risk insurance policy with the Overseas Private Investment Corporation due to environmental and human rights concerns (Bryce, 2005). An online report

by Source Watch[22], notes that "it was the first time OPIC had ever revoked risk insurance for a U.S. company due to environmental or human rights concerns." In 1999, the Amungme people themselves filed an international environmental tort against Freeport under the Alien Tort Claims, known as Beanal v. Freeport-McMoran Inc. The tort claim was later dismissed. At the end it took shareholders from New York City's public pension (2003) and from the Norwegian Sovereign Wealth Fund (2006), not indigenous peoples or activists to convince the company to improve their environmental and human rights record by filing a shareholder resolution (Hills & Welford, 2006).

In the United States, Freeport has also faced critiques and lawsuits for contaminating the environment and corporate greenwashing (Fox, 1997). FCX's behavior towards environmental damage in the U.S has been to engage in legal claims and pay compensation for their damage. According to the Australia West Papua Association, the U.S. Environmental Protection Agency in the year 1993 classified Freeport McMoran for the second year in a row as "the largest polluter of land, air and water, both in terms of volume and toxicity, in the whole of North America" (Australia West Papua Association, website). The U.S. Groundwater Awareness League in 2007 filed a complaint against the environmental records of FCX and Phelps Dodge (Groundwater Awareness League, website). Numerous environmental claims surround FCX's mining activities from dumping radioactive gypsum waste into the Mississippi River in 1990 (UTWatch), to allegations that

22 Source Watch is an investigative site published by the Center for Media and Democracy (CMD) "who focuses on exposing corporate spin and government propaganda" (website, CMD)

hazardous substances ended up in New Mexico's groundwater (NMPolitics.net, website), to releasing sulfuric acid and heavy metals from a pipeline into Lower Chase Creek in Arizona (AZDEQ, 2011). In many of these cases, toxic waste was silently released to water sources. Because of this it took environmental non-governmental organizations to fight for decontamination and damage compensation. Examples of environmental contamination on the part of FCX in the United States, "a very regulatory country" (seminar speaker, September 2009) caution our analysis of what is happening in "third would countries were regulations are not enforced" (seminar speaker, September 2009). According to the speaker at Arizona State University's seminar on environmental engineering Peru is one of those third world countries.

In Peru, a Cerro Verde mining official indicates, "they not only comply with state regulations but that Peru is one of the countries with more environmental and fiscal regulations" (personal communications, 2011). In contrast, at the global/transnational level, FCX's officials highlight Peru as a weak regulatory state, typical of third world countries. At the beginning of this chapter, the speaker at the ASU environmental engineering seminar described Peru as a third world country; this justified why FCX would build a potable treatment plant for the city of Arequipa. So, is Peru a "weak regulatory state" or a "over regulatory state"? It becomes obvious there are two contradictory discourses concerning Peru's state regulatory framework. On the one hand, the "weak regulatory state" discourse could mean that mining corporations use "their economic power and bargain leverage against weak and corrupted national

governments" (Sethi et al., 2011, p.1). However, it could also mean that because it is "weaker" it "treats mining corporations better," which is how FCX's CEO put it when commenting on U.S. citizens' attempts to hold Freeport accountable to the law, "I can assure you that we receive better treatment in some foreign countries than we do here" (Moffett, CEO Freeport as cited in CorpWatch, webiste). On the other hand, the "over regulatory state" discourse is used to indicate Peru is so "socialist" or backwards that it is not moving to a market-led framework.

Water politics as good relationships and the resource curse. FCX ties water to political, social, and environmental concerns, and transcripts from the quarterly Earnings Conference Calls provided key insights into the politics of mineral extraction and water. In the 2011 second and fourth quarter Earnings Conference Call, Freeport's CEO Richard Adkerson stated that despite the fact that

> water issues have been a challenge in Peru, they have come up with an approach [to obtain more water rights] that is being favorably received by local community and the government of developing a wastewater treatment plant for the city of Arequipa, and that will improve standards of living there but also provide us the water for our plant". (as cited in Seeking Alpha, 2011 Q2, Q4)

This highlights how crucial it was for Cerro Verde to propose an alternative for obtaining additional water rights that the "local community" of Arequipa received positively, and why it was absolutely necessary to establish good relationships with the local community and authorities. When asked by a CRT Capital Group

LLC shareholder on their thoughts regarding the protest against the Conga gold project in the northern part of Peru, Adkerson replied by saying that:

> with respect to our issues, we have worked effectively with water rights. We are doing a water project for the city now. We've come up with this solution for improving life in Arequipa through this wastewater project which is giving us water for our plant. As a result, for example, the mayor of Arequipa, who is a major supporter of Humala, is a very active proponent of our project. I met with the President Humala at APEC on a couple of occasions[23]. I was very encouraged about his support for mine development and our project. Now we do have to get permits, and there are always uncertainties. But we feel very comfortable in the way we have approached the EIA [Environmental Impact Assessment] and the project and with our relationship there. (as cited in Seeking Alpha, 2011 Q4)

This statement tied the work of acquiring more water rights directly with maintaining good relationships with political authorities and favorable support from the local community.

Another example of how water rights are tied to social, political and environmental concerns was illustrated by the fact that the same day that the Mines and Energy Minister, Jaime Quijandria Salmon, announced the construction of the Pillones dam with the financial support of SMCV, the Minister attended the ceremony in recognition of SMCV's achieving the ISO 14001 environmental certificate (*El Correo*, 2003). In that ceremony, SMCV's Board

23 http://m.terra.cl/noticia?n=201111081802_AGE_80456801

President, Raven Davenport, unveiled plans to initiate the primary sulfides project with an investment of $400 to $700 million. The Minister of Mines and Energy publicly supported SMCV's expansion plans, offering his support in working with the mine on their EIAs and on granting them respective permits (*El Correo*, 2003). Feeling an urge to attract foreign investment, Peru's governmental elites established a neoliberal regulatory framework that benefitted more private actors, such as mining corporations, and weakened public institutions and state power (Bebbington, 2007). Many scholars studying the neoliberal transformation of Peru's mining regulatory policies concur in pointing out that many of these were established illegally *(Bajo La Lupa*, 2008a; 2008b; Dammert, 2009; *La Republica*, 2012; Urteaga, 2011).

> Peru has made very significant advancements as a country, principally driven by mining investments. Our company had had a really longstanding partnership with the country and with local community. We've been an important contributor to the region and the country. It's 18% of the GDP in Arequipa region. Arequipa's the second largest city in the country and 1% of GDP. And we're investing and have invested significantly in benefits to local communities. We did a water system earlier, this wastewater system that we're working on. And we're targeting 1% of our revenues for community support even though that's not necessarily required. (FCX's CEO, Richard Adkerson, as cited in Seeking Alpha, Q2, 2011)

The unprecedented growth of extractive industry projects has brought with it, as mentioned above, a dramatic increase in social and environmental conflicts in mineral extraction areas (Defensoría del Pueblo, 2007). In many cases, these conflicts have not been properly resolved resulting in violent confrontations[24]. Peru's current President, Ollanta Humala, ran an electoral campaign centered on a left-wing nationalistic discourse critical of the mining industry's role in Peru's development. Soon after winning the Presidency, Humala proceeded to negotiate a "surplus earnings tax" on large mining corporations. As a compromise for their willingness to deliver this surplus earnings tax Humala's government committed to respecting legal stability contracts, facilitating the approval of social and environmental impact studies, and solving social conflicts in mining areas (Maldonado, 2011; Mines and Energy Ministry [MEM], 2011).

> My own judgment is that anybody who's running that country [Peru] is going to look to support mining because that's what they need to advance their country. And without mining, they have limited amounts of other business to fall back on. So we're going to work cooperatively with them overnight. Yesterday, the administration, the ministers were announced. The mines minister is an individual we've worked with in the past, and we can work with in the future. So we're certainly not affecting our operations, and we're going forward with our expansion plans with a positive view of working with the new government to get our plans

24 Such as the Cerro Quilish Conflict in Cajamarca (years), the Tia Maria in Arequipa (year), Bagua in Amazonas? and Santa Ana in Puno (year) more currently Conga in Cajamarca (2011-2012).

> approved and to invest. We believe the local major, for example, was a Humala supporter. He's very supportive of our operations and, we have a great working relationship with him. It's a question of time will tell, but we're not discouraged about where we stand right now (Richard Adkerson, as cited in Seeking Alpha 2011 Q2)

In the end Humala's government signed deals with mining corporations for the sake of funding social inclusion and welfare programs for the poor. The mining industry knew too well that Peru's government depended on them for "advancing their country."

Corporate social responsibility: water politics. Corporate social responsibility at the Cerro Verde mine was very important. At least that is what mining officers stressed during conversations. The Cerro Verde mine is unique in that it is located next to the second largest city in Peru (SMCV officers, personal communications 2011). This fact creates numerous challenges, but also the possibility of working towards regional sustainable development and having a larger positive impact. Cerro Verde has at least three different institutional offices in charge more or less on issues of social and political relations: 1) the Community Relations office, 2) Public Affairs office and 3) Cerro Verde civil association.

The Cerro Verde civil association was established as a result of conflict negotiations with Peru's central government and Arequipa's state authorities and social organizations. In 2007, Cerro Verde Mining Corporation signed a "voluntary contribution" agreement with the Ministry of Mines and Energy under

the “Mining Program in Solidarity of the People.” As part of this agreement, in January 2008, SMCV established the Cerro Verde civil association in order to manage the mine’s voluntary funds. However, it was not until July of that year that the civil association actually began working.

According to the 2012 Extractive Industry Surveillance publication, Vigila Peru No. 15 (2012), of the 420,198 million nuevos soles that the mine deposited for Cerro Verde’s civil association during the past five years (both for regional and local projects), only 194,132 million nuevos soles have actually been used. Only 48% of regional funds have been used and 47% of local funds (Vigila Peru, 2012). In addition to this, most striking is the fact that of the total amount of allocated funds (funds not necessarily used but assigned to some project) which summed 416,565 million nuevos soles, approximately 72% were allocated to basic infrastructure projects. In the case of Cerro Verde, the infrastructure rubric consisted primarily of water service and hydraulic infrastructure projects, such as construction of dams, canals, water treatment plants, sewer systems, etc.

Representatives of Cerro Verde’s civil association noted the importance of water services as key in their commitment for social responsibility.

> Our vision is very clear; it is focused on long-term development, we want our money investment to have a return, because water and sewage have a multiplier effect in children’s development, in decreasing lung and stomach diseases, in social integration. A child with water and sewage will perform better at school, will have a better personal development, and in

> general would operate in a different scheme. (SMCV officer B, personal communications, June 2009).

Water infrastructure projects were central to Cerro Verde's association and corporate social responsibility.

As I walked through the North Cone, I encountered pipeline construction work and sometimes billboard signs publicizing the Cerro Verde civil association. It was difficult to know exactly how much of Cerro Verde civil association's funds were going to pipeline installations, public health programs and infrastructure work in the North Cone (SMCV officer B, personal communications; field observations). However, the Association did not work in isolation, but instead with other partners such as nonprofit organizations, private companies, and state agencies.

> In this "water business" the last thing I want to highlight as a theme, is joint work between authorities, water service provision companies and the private sector is fundamental, and perhaps is one of the few themes we are committed either by initiative of the private sector, our initiative, but also because of the initiative of some authorities, we are making progress, agreements that allow us to develop energy generation, and drinking water and we are now in the process of negotiating sewage. (SMCV officer A, personal communication, August 2011)

Partnerships between the private, public, and civil society entities, in the corporate social responsibility literature, are a "more efficient and effective way for companies to contribute to sustainable development" (Hamman, 2003, p.245).

Nonetheless, research and experience indicate partnerships are no panacea (Hamman, 2003). The partnership between the Cerro Verde mine and Peruvian state for the construction of potable water and wastewater treatment plants illustrated the problems that might arise. Literature on corporate social responsibility and partnerships identified certain circumstances and conditions for a "partnership" to be successful (Hamman, 2003; Banerjee, 2001). One of those circumstances was for parties to be relatively equal in power and access to resources, and another condition was that all indigenous communities are in favor of mining in their lands (Banerjee, 2001). Power issues were problematic in the Arequipa case, since the mine's power overshadowed that of state as well as civil and political society.

Conclusion

This chapter centered on understanding the meaning and practice of water from the point of view of the mining corporation as part of a broader objective of evaluating whether water justice can be achieved in an extractive industry context. More specifically, I tried to make sense of how the mining corporation's discourse, use and decisions about water shape the politics and scale of water governance. I identified four arguments in relationship to the mine's relation with water as a hybrid nature:

First, the meaning and practice of water for the mining corporation was tied to their business practices. Water was considered an asset of fundamental importance for mineral extraction. It is impossible to extract minerals without the use of water or without affecting water sources in one way or another. By

analyzing the meaning of water at the transnational corporate level and at the local mine level, I was able to identify how much in common these two different scales have with regards to their perspective on water. As a matter of fact, it become evident to me that the transnational corporation, FCX majority shareholder of Cerro Verde mine held strong influence at the local level.

Second, the politics and scale of water governance for the mining corporation extended beyond state's administrative structure or natural watershed boundaries. Transnational mining corporations viewed water in a global context in which state and bio-physical boundaries disappear. Borrowing from Harvey's (2001) concept of spatial fix, I analyzed FCX position under global capitalism. FCX is constantly in the search of expanding their business, either as geographical expansions such as the acquisition of new mining sites or technological expansions like in the case of the Cerro Verde mine which through technological advancements it expanded copper production in 2008 and is thinking about doing it again in the year 2014. These expansions are thought as in an abstract space, in which time is infinite and materiality is control by human forces. There is always a remedy, compensation or "externality" that can be proposed, managed, or negotiated, because at the end capital and the free market dictate the way.

Third, the meaning of water rights for the mining corporation was rooted in economic value. Therefore cost/benefit analysis and market analysis were used when making decisions on how to acquire more water rights, permits or licenses. This perspective stood in contrast to other ways of thinking about water. This

chapter provides specific examples of how water at the transnational corporate level was viewed as a commodity, such as the case of FCX's acquisition of Planet Ranch in Arizona. I argue that the commodification of water leads to accumulative practices and disposes others of their right to water. What is thought provoking about this case is that at the local level FCX, through its subsidiary Cerro Verde Mining Corporation, was involved in a project that could be viewed as having implications for realizing the human right to water. From a plurilegal understanding, the human rights framework is one more version, although hegemonic, of a water rights system. Grounding my standpoint on decolonial and political ecology perspective, I question the extent to which the construction of the potable treatment plant by a private transnational mining corporation would guarantee human rights.

And finally, the mining corporation's meaning and practice of water was tied to the mine's social relations and cultural processes. As the mining corporation gained more power and control over water governance decision in Arequipa, in inserted its logic into many different social realms. In this chapter I expand into four different realms. First, on the realm of Peru's fiscal system, the mining corporation challenged state legislation by refusing to pay mining royalties and refusing to surrender their right to use the reinvestment program despite the fact this program was eliminated in the year 2000. Second, on the realm of environmental governance, the mine utilized a double discourse by which it claimed to uphold higher standards of environmental regulations than third world countries while at the same time high ranking mining executives brag

around the fact that they are treated better in third world countries than in the United States. Third, on the realm of political and social relations, the mining corporation places great importance on social networks, lobbying and getting to know political elites in order to build good relationships. Maintaining good relationships with economic and political elites was fundamental when applying for water rights, licenses and permits. Fourth, and last, the social and environmental implications of water management for mining corporations were dealt with public relations or social corporate responsibility responses. In this specific case, Cerro Verde's corporate social responsibility was heavily directed towards building water service (potable and wastewater treatment plants) and hydraulic infrastructure (dams, reservoirs, canals).

CHAPTER FIVE

WATER INJUSTICES IN AREQUIPA: POLITICAL SOCIETY, STATE AUTHORITIES, AND THE CERRO VERDE MINE

"Not in vain one is born at the footsteps of a volcano[25]*"*
Arequipa's popular saying

Figure 14: Bull Fighting, "El Capo" Festivities, Arequipa. Photography by Author, taken August 2011

"This is one of the most emblematic monuments in Arequipa," said the environmental engineering seminar speaker at Arizona State University, showing the picture in a PowerPoint slide, "it portrays the statue of two bulls fighting." I later learned that bull fighting was one of the most important colonial traditions appropriated and reclaimed by Arequipeños. For the seminar speaker, this monument symbolized a problematic and aggressive interaction. "This image reminds us of the Fight Committee (Comité de Lucha)." According to the speaker,

25 Saying in Spanish: "No en vano se nace al pie de un volcán"

the Fight Committee consisted of a group of regional leaders who did not want to compromise with the mine for the benefit of the community, but instead were led by economic and personal interests.

> We are trying to work with this group. First we'd like to change their name to the "Partnership Committee." No more banging heads against each other. Following this we want to change the group's focus. Instead on focusing on the mine, we want them to focus on the community. (seminar speaker, personal communication September 2009).

During fieldwork in Arequipa, not only did I encounter the bull fighting monument in the Ejercito Avenue, I also found the same image represented on the parade of "El Capo" during the week of Arequipa's Anniversary Festivities. It was, indeed, an important symbol of Arequipa's militant and rebellious spirit (Tejada, 2009). I was also eager to find out more about the "Fight Committee." Why did it have that name? It seemed rather counter-intuitive. I soon figured out the name in Spanish for the group was the "Comité de Lucha," which could also be translated as the "Struggle Committee." And it was much more than just a group of regional leaders, it resembled more of a popular front that grouped together different political and social coalitions. So, what relationship did bull fighting share with the Comité de Lucha (Struggle Committee) and the interpretation made by the seminar speaker? I resolved to find out who the Comité de Lucha was, and why they were "fighting" with the Cerro Verde mine.

In this chapter, I weave together arguments presented in previous chapters in order to illustrate what water injustice looked like in Arequipa. First, injustice

looked like people subordinated in terms of class and race without access to clean, safe and affordable water. In light of Peru's state coloniality of power (Quijano, 2000a) that is a residual colonial system of race and class oppression, political society organized to demand their right to water. The Peruvian state and the public interest Water and Sanitation Company, SEDAPAR, failed to deliver basic water and sanitation services for the poor and to decontaminate water from human sewage. While SEDAPAR and Peru's state alleged insolvency for their failure, a more in-depth analysis revealed that coloniality of power in this case was characterized by a complex residual system of race, class and cultural oppression coupled with patron-clientele social relations. Political society was forced to turn to powerful economic actors, such as the mining corporation, as a possible alternative to attain their basic water needs. Private transnational corporations became agents for the provision of social welfare of the people in Arequipa. Concurrently, as the post-colonial state ceded in many respects its developmental and welfare roles to the market (Jessop, 2004), powerful economic actors, such as mining corporations, assumed control over the governing of people and territories. Scholars studying power relations like Nikolas Rose and Peter Miller (1992), explain this type of governance by extending Foucault's concept of state governmentality (2006) into apparent "non-political" spaces of power like a corporation.

Second, water injustice manifested itself through hegemonic meanings and practice of water rights, suppressing other meanings and practices of water rights. In the struggle for water justice in Arequipa, different understandings of water

rights were constantly contested and collided. However, not all understandings of water rights held the same power; instead, there were water discourses and practices that were more salient. As shown throughout previous chapters, this research begins with the idea that water's materiality and social construction dialectically related to social actors' meaning and practice of water and water rights (Swyngedouw, 2004). Therefore, water and water rights were understood differently depending on each social actor's relation with water. As described in Chapter Four, the meaning and practice of water and water rights for the mining corporation were tied to an economic valuation and a "sustainable development" discourse. For the mining corporation, water justice was about proper compensation for adjudicated water rights or for social or environmental damages caused by mining operations. In contrast, water and water rights for political society living on the outskirts of the city were not only about access to affordable and safe water but about their right to a livelihood, land tenure, and a safe environment. For the state, water justice in discourse was about mediating between conflicts but in reality, their practice was questionable. These different understandings of water and water rights were in constant tension and contestation with each other.

Third, extractive industries policies were conducive to water injustices. The structural system of knowledge, policies, and regulations were ways of disciplining and prioritizing the extractive industry's economic development model. On the one hand, Peru's neoliberal normative framework in the mining and water sectors served to shape a governance structure, which gave the

extractive industries substantial power (Bebbington, 2007). This accentuated confrontations between national, regional and local governments and fueled the mining corporation's involvement in welfare and development. On the other hand, the decision to fund welfare programs with rent from the extractive industry and stimulate private corporations' involvement in local development had a direct impact on land, water, and zoning policies. Within Arequipa's urban ecological process, different scales of water governance coexisted and interrelated in complex ways. At the level of the North Cone the meaning, decisions, and practices of water differed significantly from those happening at the transnational mining level where the scale at which water decisions and practices take place were either supported by national neoliberal policies or based on transnational understandings of water. This was the context in which the mining corporation Cerro Verde arose as a key political and economic actor in the governance of water.

I illustrate these arguments by narrating the story of how the conflict between the Cerro Verde mine, social organizations and political authorities in Arequipa was resolved. I base my argument in part on the analysis of texts produced by the Defense, Integration and Development Front of the North Cone (FREDICON) such as official letters and communiqués, and in part from ethnographic research in the form of formal and informal conversations and participant observation. I start by narrating how in 2004, political society began the struggle against the Cerro Verde mine. This story shows how political society turned to the mining corporation, a powerful economic actor that had the potential

of impacting their day to day needs. Then I continue with the story of the formation of the Comité de Lucha in 2006. Mining policies designed to attract foreign investment such as "reinvestment program" and the mine's "stability contract" played a big role in galvanizing elected political leaders to join political society in their opposition to the mine. This story demonstrates how a mining normative framework fomented the incorporation of mining corporation's influence and role in welfare and local development. Following this, I turn to analyzing the process of conflict negotiations (2006-2007) between the mine, national, regional, local state authorities, as well as civil and political society. This story speaks of the role national government played in resolving the conflict by serving as a biased mediator siding many times with the mining corporation. Although from the point of view of national government this was explained by Peru's former President, Alan Garcia, as "putting value to resources not being used" (Peru's President Alan Garcia, as cited in *El Comercio*, 2007), in reality the state's attitude was better explained as understanding politics as conditioned gifts.

FREDICON and COFREN: "Let's Plant Trees in the Cerro Verde Mine!" (2004-2006)

While subalterns living on the outskirts of the city and organized under FREDICON were struggling for basic necessities such as water in the North Cone, Cerro Verde mine was laying the groundwork for a copper concentrate expansion project. The long struggle for access to water in the North Cone had won some major victories; however, financial constraints and political failure brought the struggle to a standstill. For example, the state argued it did not have

sufficient money to fund major water service infrastructure projects. However, my research revealed that a complex residual colonial system of race and class segregation and clientelist relations was at work. As the city of Arequipa grew demographically and copper production increased, the city was in grave need of potable and wastewater treatment plants and a proper sewage system. When FREDICON opted to analyze who could help finance water works in Arequipa, one social actor stood out: the Cerro Verde mine. Around that time, the mine announced it was going to invest 800 million dollars in the region of Arequipa, generating high expectations among social, political, and economic actors in the city (Gerardo, personal communication, June 2010). The mine's profits were on the rise but according to popular perception, their social contribution did not follow the same tendency (fieldwork, personal communications 2010, 2011). For subalterns organized in urban squatter organizations like FREDICON and COFREN, Cerro Verde was profiting from the rise of copper prices but was not environmentally responsible and was not contributing properly to Arequipa given the non-renewable minerals it was extracting (Santiago, personal communication June 2010).

In October 2004, FREDICON and COFREN initiated a public shaming campaign targeting the Cerro Verde mine in order to raise public awareness on its environmental record. The organization began by writing letters to Cerro Verde representatives requesting a copy of the primary sulphides expansion project's Environmental Impact Study (EIS) and an informative meeting with mine officers (2346-FREDICON-COFREN-2004). In the letter, they state that:

> With respect to the headlines covering front pages regarding the [construction of] tailings dam [in order to conduct] a primary sulphides expansion project located in the Uchumayo district adjacent to the jurisdiction of the North Cone… we have agreed to solicit further information about the case, that according to our humble criteria would negatively affect the environment, since matter cannot be destroyed or disappeared, only transformed, becoming dust, vapor or fusing with underground water, affecting flora, fauna and surrounding human life. As urban districts, Uchumayo together with the North Cone, we would be most affected. (Official Letter from FREDICON to Cerro Verde Mine, Nro. 2346-FREDICON-COFREN-2004, October 22, 2004)

Framing their relations with Cerro Verde under an environmental discourse framework, FREDICON and COFREN stressed that in "their humble criteria" a mining project affected the environment "since matter cannot be destroyed or disappeared only transformed." The appropriation of an environmental discourse was crucial for the justification of their demands. The employment of this discourse could be misinterpreted as merely calls for environmental justice. However, when considering their actions and practices, I found that there were demands that included economic and social claims. After all, FREDICON's constituents were migrants from other southern regions in Peru who squatted on the outskirts of the city looking for a better life. Hence, they made sure they clarified this in their letters.

> We want to make clear that we do not oppose private investment, if this contributes to sustained development in the region we are part of. Especially if the proper safety precautions and preventions are put in place for factory facilities, tailings dams, among other nature pollutants, are mitigated in advance so that these do not affect flora, fauna and human life. (Official Letter from FREDICON to Cerro Verde Mine, Nro. 2346-FREDICON-COFREN-2004, October 22, 2004)

In this regard, this movement cannot be understood under the rigid typology of the "old" economically-based or the "new" identity-based social movements. As stated by Orozco Ramirez, Garcia Linera and Stefanoni, (2006) social reality in Latin America renders obsolete the "old" and "new" social movement typologies. Many times, as in this particular case, "social movements' material, social, and identity aspirations converged in specific and original ways making it impossible to differentiate those predominantly about material, economic and labor factors vis-à-vis those about identity and cultural factors" (Orozco Ramirez et al., 2006, p.15). Instead, scholars studying social movements in Latin America and Peru (Orozco Ramirez et al., 2006; Tejada, 2009) propose the need to understand subaltern and indigenous peoples' movements "as combining cultural and identity questions with access and control of natural resources which are tied to "material" life conditions" (Tejada, 2009, p.22). FREDICON's struggle was about subsistence in the form of a livelihood that included "a place for one's own", but it was also about sustained development for Arequipa as a region.

Andean migrants, coming from peasant and indigenous cultures, organized to fight for their right to a livelihood in which water was essential for life in the city of Arequipa. Through their interactions with state institutions and more particularly with the transnational mining corporation, we see how they gained political momentum, breaking from the periphery and becoming decisive regarding local, regional and national politics. Anthropologist de la Cadena (2008) explains this as the emergence "of place as a political site to express subjectivities and formulate demands challenging the spatial mechanisms of state regulation" (p.346). The North Cone went from being an "empty space" into an "inhabited" space; people living in this part of the city went from being, according to Arequipa's elites, "illegal land grabbers" to "land owners," from "dirty migrants" to "political actors." By doing so, they defied not only state categories and technologies of power but also Arequipa's hegemonic racial and classist exclusions (Tejada, 2009). Migrants squatting in the North Cone looking for a place to live, ground their struggle/politics in particular local-regional-national histories. As a matter of fact, even when many were not native of Arequipa but migrants from adjacent Andean regions such as Cusco and Puno, they nevertheless collectively imagined themselves as "Arequipeños." fighting for the region of Arequipa.

> Consequently any mitigation process should be oriented for the sustained development of Arequipa, where the North Cone has an important role to play as it is currently inhabited by more than 120,000 people and its projection for 2010 is more than 250,000 inhabitants. (Official Letter from

FREDICON to Cerro Verde Mine, Nro. 2346-FREDICON-COFREN-2004, October 22, 2004)

Sociologist Jorge Bedregal (as cited in Tejada, 2009), argues that facing harsh exclusions, "migrants, their children and grandchildren find strategic mechanisms to integrate into an exclusionary and disintegrated society, such as the Arequipa" (p.133). De la Cadena (2008) views these groups as challenging "a formation of antagonism articulated by the governmental technologies of the state," although by doing so they "may articulate new antagonisms of its own" (p.346). In fact, they did. In this specific case, subalterns appropriated land circumventing state law, thus generating new urban antagonisms. Many regional and local officials as well as city dwellers expressed concern about this. "There is high speculation for these lands, they take a piece of land, invade it and then sell it in the future. When they see this [invading lands] as a business, then is when we have serious problems" (Leyton, personal communication, June 2010). Not only did the mining corporation have the technological capacity of translating former "empty land" into mineral repositories (de la Cadena, 2008), but interestingly in this case, subalterns looking for their own place had also mastered the know-how to do so. In accordance with de la Cadena (2008), ethnography in Arequipa confirms political society's place-based movements were constantly challenging geo-political territorial categories.

As FREDICON and COFREN expressed their concerns for the environment and Arequipa's "sustained development" in the form of letters addressed to the President of Cerro Verde's Board, Cerro Verde moved forward

with their expansion plans by constructing new water reservoirs on the Chili River's headwaters, and negotiating water rights in the form of licenses with the national government. Following subsequent exchanges of communication and a field visit to the mine (SMCV/166/04), SMCV sent FREDICON a digital version of the EIS (SMCV/AL/1656/2004), which FREDICON considered incomplete. Beginning in 2005, FREDICON solicited authorization for an autonomous technical group composed by specialists elected by urban squatter organizations to access the mine and conduct an independent soil study where the tailings dam was to be constructed (05-FREDICON-COFREN-2005).

> We appreciate the sending of the 10 Environmental Impact Study CDs. It [info on CDs] has been analyzed and by recommendation of the engineer responsible of FREDICON-COFREN's technical team, in order to continue with the effective study, they [technical team] are asking for authorization or permit for them to conduct a soil study at the location where the tailings dams will be placed and give their opinion on the matter. In this way, avoid in the future leaks or soil contamination. (Official Letter from FREDICON to Cerro Verde mine, Nro. 05-FREDICON-COFREN-2004, January 5, 2005)

In the same letter, FREDICON and COFREN recommended that the mine implement a reforestation area adjacent to the tailings dam that would serve as a site of permanent environmental evaluation. Cerro Verde responded by saying:

> With regards to your letter, Nro. 05-FREDICON-COFREN-2004, we inform you that in relation to the first item, our technical team is currently

> culminating the final soil and hydrological tailings dam studies. Once we have the final report ready, we will send it to your technical team for their information. Subsequently, we will invite you all to a meeting with our specialists, in which you will have the opportunity to clarify all your doubts. (Letter from Cerro Verde to FREDICON, Nro. SMCV-AL-119-2005, February 04, 2005)

Letters between FREDICON and the mine went back and forth. Time passed and no independent engineer was allowed to participate in the mine's soil evaluation. The dialogue came to a halt after one environmental activist was prohibited from boarding the bus that would take a group of social leaders to the mine for a coordination meeting.

> This for our organization constitutes an insult because we are not going to allow no one to demur any of our leaders since they were elected by General Assembly to be part of the team… We believe the dialogue has been rudely brought to a halt by the mining company Cerro Verde, who is dangerously provoking the people of Arequipa with its contamination and constant manipulation. However, we are a supportive and organic organization and we make others respect us with the law at hand: New Environmental code DL. 613, Law 25238 and the General Law and its regulations 28245 from the National System of Environmental Management (Letter from FREDICON to Crime Prevention Office, 111-FREDICON-2006-07)

Social mobilizations and demonstrations were FREDICON's primary method for empowerment. "We started as an environmental movement. Proof of that was that we organized in 2005 a big mobilization to the mine, supported by the Environmental Defense Front of Uchumayo and we achieved to plant 500 trees at the mine's entrance" (COFREN's leader, personal communication, September 2011).

FREDICON and COFREN proceeded to organize ecological marches with the intent of planting trees at the mine's entrance and bringing attention to the environmental question. "During that time, we asked the mine to plant one million trees to counteract the twenty four years of accumulated contamination in Arequipa" (Santiago, personal communication June 2010). FREDICON wanted to teach by example by planting trees at the mine's entrance, urging the mine to improve their environmental record.

However, FREDICON knew that they needed to exhaust legal state procedures, thus they proceeded to file complaints at the district attorney's office and contacted the Ministry of Energy and Mines. "The legal part has to follow its own course. We, social leaders have to focus on the people. People don't care what the judge says. People want to see action. The social [aspect] is what rules" (Santiago, personal communication September 2011). For FREDICON, it was crucial to solve social problems. "Legal toleration is good, but it has its limits[26]" argues FREDICON in letters addressed to the district attorney's office (Nro. 87-

[26] "la tolerancia legal es muy buena pero tiene sus limites"

FREDICON-2005; Nro342-FREDICON-COFREN-2005). Political society constructed social and political relations at the margins of legal procedures. With "at the margins," I mean they combined the use of legal and extra-legal procedures, thereby constantly challenging state law's hegemony. In this sense, they went beyond mere state interpretations into an alternative or autonomous discourse and practice of rights. In doing so, the legal component was one tool but it was not the solution. Instead, actions in the form of marches, demonstrations and direct social actions were fundamental for solving people's problems and achieving justice. With these actions, political society applied pressure to state power, created a breaking moment and the possibility for social transformation.

> Apparently they [the mining company] want to create confrontations by not responding our letters… We will not be responsible for the radical actions people are thinking of taking against the mining company. They [the people] manifest they will do it [take radical actions] for the legitimate defense of life which is protected by criminal code. (Letter from FREDICON to Crime Prevention Office, Nro. 342-FREDICON-COFREN-2005)

In February 2005, FREDICON and COFREN filed their first claim against Cerro Verde mine at the district attorney's crime prevention office "in defense of life and the environment" (0149-FREDICON-2005). As evidence for the mine's misdeeds against the environment, FREDICON attached an air evaluation report conducted by Arequipa's Regional Health Administration (16-2005-GRA/PE-DIRSA/DG-DESA). The report identified Cerro Verde mine as one of many

sources of air contamination and recommended an aggressive reforestation plan. The district attorney's office responded by exhorting the mine to initiate dialogue with the authorities and civil society for the well-being of the environment, the Health Ministry to conduct necessary environmental evaluation reports, and FREDICON - COFREN to follow suit via legal avenues and pertinent authorities (090-2005-MP-3FPPD-AR). FREDICON continued to file claims against Cerro Verde at the district attorney's crime prevention office (87-FREDICON-2005; 105-FREDICON-2005). The district attorney declared FREDICON's request that SMCV water the trees they planted unfounded, and urged FREDICON to abstain from actions that altered public order. At the same time, he urged local municipalities to comply with their environmental protection and conservation functions, and insisted the Regional Health Administration and Cerro Verde mine to concretize a reforestation plan as soon as possible (236-05-MP-2FPPPD-AR).

As the confrontation escalated, FREDICON contacted the Ministry of Energy and Mines (also known as MEM) in Lima, asking MEM to intercede in order to reinitiate dialogue with the mining corporation. They also informed MEM they were planning to travel to Lima to demand the revision of the mine's approved EIS.

> Arequipa's population is very concerned because the Ministry of Engineering and Mines has approved an environmental impact study of little credibility and with unresolved questions as the case of the groundwater study and the greenhouse pollution effect among other observations that have to be acquitted in the field and not in bureaucratic

> documents… For these reasons we urge you to intercede your good deeds [in order] to avoid unnecessary conflicts and it suits Mining Corporation Cerro Verde to reopen dialogue and search for solutions respecting environmental law. (Letter from FREDICON to the Minister of Mines and Energy, Nro. 101-FREDICON-2005, March 31, 2005)

More than 1,500 people traveled from Arequipa to Lima and on June 8th, 2005 they held a meeting with the Ministry of Energy and Mines. From this meeting, FREDICON and MEM authorities committed to meet again in Arequipa and put together a participatory environmental monitoring committee. In Arequipa, MEM and FREDICON settled on the need to conduct an independent environmental examination of Cerro Verde's mining facility. FREDICON and COFREN negotiated their participation with this examination. In June 2006, MEM hired a private consultant company, Setemin Ingenieros S.A., to conduct the study and they specifically ordered them to coordinate with FREDICON (918-2006-MEM-DGM). Nonetheless, Setemin ignored MEM's mandate and communicated only with the mine and Arequipa's School of Engineers (243-06/00). In light of this situation, FREDICON filed a criminal complaint against Cerro Verde Mining Corporation, the engineering company Setemin Ingenieros S.A., and the Ministry of Energy and Mines for crimes against the environment, health and life, and for state corruption and inaction (111-FREDICON-2006-07).

The story of the struggle of FREDICON-COFREN against the mining corporation illustrates how state-society-nature relations played out in Arequipa. We find that political society demanded the Peruvian state fulfill their obligation

to provide basic services, such as access to affordable, safe and clean water, and to regulate the mining industry. Feeling betrayed by the state on different fronts, political society demanded a "special examination" of Cerro Verde's environmental impact study (EIS). As a result, they forced the state to hear political society's claims, and hired a private consultant company to examine the mine's EIS. It is important to note that political society's relation with the Peruvian state was very complex. On the one hand, they viewed the state as a welfare state obliged to provide for their basic needs. However, on the other hand, the state's failure to provide for basic services coupled with state extractive industry led-development policies, forced them to view the transnational mining corporation as a possible provider of basic services. The result is that they then turned their attention to the mine. Conversely, even though the mine was included as a target for attaining their right to a decent livelihood, political society did not renounce the state's responsibility. What occurred, was that in their fight against the state and the mining corporation for their right to livelihood and for "Arequipa's development," they moved between resistance and complicity. From one perspective, we see subalterns constantly betrayed by the state or other social actors who allied themselves with the mining corporation's interests. One example is the private consultant company, who turned their backs against political society and ignored them while examining the mine's EIS. From another perspective, we see subalterns complicit with state colonial structures, in that they made a pact with dominant powers in order to survive.

With respect to the meaning of water and water rights, we find not only that different understandings were in constant confrontation with each other, but that some understandings were hegemonic. At the same time, we see that political society was willing to "negotiate" substantial demands like environmental justice for specific social and economic development projects. For some political society leaders, environmental demand was just and non-negotiable, for others it was part of a negotiation strategy to bring SMCV to the table. It is important to note that, as shown in the previous paragraphs, FREDICON was not "against mineral extraction" but instead wanted mining profits to be distributed more justly in order to contribute to "Arequipa's sustained development" (personal communication, 2011). This position stands in contrast to the position held by the so-called "anti-mining" social organizations who actually proposed the elimination of extractive industry projects.

> We do not participate in CONACAMI [Confederacion Nacional de Comunidades del Peru afectadas por la Mineria/National Confederation of Peru's Communities affected by Mining] first because we do not agree with their way of thinking in this moment, they are way too anti-mining. And [second] because we believe we don't need to be anti-mining, but instead look for a solution. (Santiago, personal communication, September 2011)

This made FREDICON's position more practical. In this regard, FREDICON and COFREN did not engage in a radical critique against neoliberal development, but instead acted as social catalysts for accountability.

> That was the starting point, but it had an objective, in addition to fighting for the environment we wanted the mining company to fulfill its social responsibility by contributing to Arequipa's development, something the company was not doing, they were simply paying their income tax. The government, very cleverly, later on modified the terminology, naming 50% of the income tax as the "Mining Canon", fooling around people making them think that the mining industry contributes... when this is only the income tax. They should pay "Mining Royalties" but they don't want to. (Santiago, personal communication June 2010)

The starting point was "fighting for the environment," but then the claim turned into becoming "development partners" co-benefitting from the mine's profits and the copper's high prices.

> An environmental claim originated from nearby communities to Uchumayo and Cerro Verde which was complemented by the proposal of a Framework Agreement for [Arequipa's] Development. That is to say, how are we partners? How do we share things? And not only, what do you give me for free? Or what can you give me?, that was the initial proposal; but the mine did not accept it. (Gerardo, personal communication, June 2010)

Political society claims reached an impasse. The mine decided to continue with their expansion plans and ignored political society's demands: after all, they had the national government's political support. This support was evidenced during the second EIS public hearing, in which, according to attendees "more than

150, almost 200 observations were made; and after 15 or 20 days, following a political decision the EIS was approved and the expansion project was authorized," (Gerardo, personal communication, June 2010). With EIS approved, the mining corporation was also authorized to use the reinvestment program fiscal incentive. Following this, in 2006, the movement strengthened as regional and local authorities, as well as civil society organizations, decided to join political society in their protest against the mine.

El Comité de Lucha and Arequipa's State Authorities: "Pay your Taxes!"

From 2004 to 2006, discussions about SMCV's contribution to Arequipa's development among regional and local state authorities and civil and political society organizations became common. This was specially the case since SMCV was building a new copper concentration plant and tailings dam using a reinvestment program designed to stimulate large capital expansions, and was not paying mining royalties. SMCV's reinvestment program was approved in December 2004, and as part of this program, SMCV was allowed to invest their non-distributive profits up to U.S. $800 million in capital expansion projects. By doing so SMCV paid U.S. $240 million dollars less in income tax over their distributive profits. This reduction of income or rent tax also meant a reduction of 120 million dollars in mining canon, which is 50% of the income tax. From the center of state power, the city of Lima, economist Humberto Campodonico (2006a; 2006b; 2006c; 2006d) and congressman Javier Diez Canseco (2005a; 2005b; 2005c) denounced this tributary benefit.

For social leaders, the reinvestment program benefited only the mining company. “They used a Supreme Decree that allowed them to reduce their income tax, how fresh of them! With Peruvian money they expanded their tailings dam” said one of FREDICON’s leaders (personal communication June 2010). For the mine’s representatives, “this is the minimum a state can do to stimulate investment, it is not that we are taking away from the people, we are revitalizing the economy through employment and consumption” (SMCV officer B, personal communication, 2010). For the Peruvian state, this kind of norm served to liberalize the economy, attract foreign direct investment, and promote the insertion of Peru’s mineral production into world market economy. In this regard, since the 1990s, the state has focused on regulating, modifying, and adjusting legal and institutional frameworks in order to serve capitalist expansion.

More recently, especially after gold and copper world prices skyrocketed during the early 2000s, Peru’s Congress passed laws aimed at balancing the extractive industries rent system. I would like to highlight two such laws. The first one, Law 27343, passed in the year 2000 and, repealed the reinvestment program. The second law was the Mining Royalties Law passed in 2004. Mining corporations holding stability agreements signed during Fujimori’s government had refused to pay royalties despite the fact that Peru’s Constitutional Tribunal established royalties were compensations and not tributes (0048-2004-PI/TC). In addition to this, mining companies had fought for their right to use the reinvestment program. SMCV’s reinvestment program was approved four years

after the passing of Law 27343. To this date, SMCV does not pay mining royalties.

In addition to being able to use the reinvestment program, SMCV was able to negotiate additional rights to water and power. Partnering with energy provider EGASA, Cerro Verde participated in the construction of new water reservoirs on the Chili River's headwater. This investment was tailored to strengthening hydroelectric capacity of the basin. By January 2004, a Supreme Decree granted SMCV license to use 60 percent of the total amount of stored water in the Pillones dam. This decree stipulated that the construction of the Pillones dam was a matter of public necessity and regional interest in order to increase water for agricultural, mining, and energy activities. When analyzing this political decision, it became clear that extractive industry policies prioritizing mining, oil, gas, and forestry investments had direct effects on land, water, and territorial zoning policies. Scholars studying water conflicts in Peru such as Mourik Bueno de Mesquita (Bueno de Mesquita, 2011), have identified these policies as having consequences on the accumulation of water rights by dominant economic actors. Moreover, water justice researchers such as Milagros Sosa and Margreet Zwarteveen (Sosa & Zwarteveen, 2011) identified the Peruvian state as legitimizing accumulation practices as the sole "desirable way societies can achieve development" (p. 383).

Research on the extractive industry's rent or revenue distribution system in Peru, conducted by Javier Arellano Yanguas (2011), found this system actually increased social conflicts and did not meet the promise of development. Arellano's findings hold up well in the case of water conflict in Arequipa. In this

particular case, it was remarkable to see how the prospects of receiving a greater rent contribution from Cerro Verde's expansion project created enormous expectations from the people and Arequipa's regional and local governments. Arellano (2011) argues that the way the rent distribution system is set up in Peru actually produces a "rent effect" by which social conflicts become more prominent in regions with higher mining rent. These set of policies, according to Arellano (2011) reinforced the idea that companies controlled the state and were in charge of protecting and providing the welfare for the people living next to the mineral extraction project. In addition to this, Arellano's research finds that higher fiscal rents from the mining sector generated disputes among regional and local governments who fought to maximize access and use of these financial transfers. In the case of Arequipa, after finding out that a stability agreement signed with the national government authorized the mine to decrease its rent contribution, disillusion and anger arose amongst regional and local governments, as well as within civil and political society.

Soon after discovering that the mine was exempted from paying part of their mining canon in order to use it for their capital expansion project, FREDICON and COFREN were joined by other social organizations such as Uchumayo's Defense Front (Frente de Defensa de Uchumayo), Arequipa's Worker Federation (Federation Departamental de Trabajadores, FDTA), the Broad Civic Front (Frente Amplio Civico, FACA), the Association of Popular Settlement Organizations (AUPA), and Arequipa's regional and local governments. The "Comité de Lucha" was formed by the alliance of a broad base

of social and labor coalitions, and regional and local elected state authorities (Mendoza, personal communication 09-02-2011). This was not the first time that political and civil society organizations and elected politicians joined forces in defense of their demands. Back in 2002, during the "Arequipazo" they had allied against the privatization of the public interest energy company, EGASA (Coronado del Valle, 2002; Leyton, 2002; Madueno Paulett, 2007; Tejada, 2009).

The Comité de Lucha was not a spontaneous alliance. There were many socio-political spaces already active and in use, such as the Broad Civic Front, FACA and the People of Arequipa's Assembly. Founded in1998, FACA's main objective was to fight against Fujimori's dictatorship and recover democracy. The People's Assembly in contrast, was founded in 2003 by Arequipa's Provincial municipal ordinance in order to work with social organizations on the city's main problems, such as air and water contamination and the provision of basic services to marginal urban communities (Provincial Mayor, personal communication, September 2011). During public hearings organized by the People's Assembly there were extensive and heated debates on what should the people of Arequipa's position be vis-à-vis Cerro Verde's expansion project. According to social leaders who participated in these hearings, different strands of opinions emerged. There were those who wanted a more radical opposition against mining in general and therefore argued for a grand revolution against Cerro Verde following the example of Cerro Quilish anti-mining protest in Cajamarca. Others had a more practical position, and wanted to negotiate economic contributions "for the development of Arequipa" (personal communication, 09-05-2011). In midst of

this dispute, the Provincial Mayor of Arequipa, Yamel Romero, called for the formation of the Comité de Lucha and invited regional and municipal governments as well as popular organizations to unite forces.

The Comité de Lucha produced a document regarding what the mine's contribution to Arequipa should be. "In that document we asked heaven from the mine," reflected COFREN's President (personal communication, September 2011). The idea was to get the mine to assign a budget for Arequipa's development. "The mining company would not accept our proposal of 10% of their profits as the mine's contribution for the "Framework Agreement" with Arequipa. They viewed it as an additional tax which they were not willing to pay" (Mendoza, personal communication September 2011). Cerro Verde was not willing to negotiate directly with the Comité de Lucha. The conflict reached a peak when the Comité de Lucha and local political authorities organized the largest mobilization in the history of the protests against the Cerro Verde mine. The strength of social organizations and the power of legitimate authorities combined to mobilize more than 25,000 people. "More than 40 buses filled with people took us to the mine. We calculate there were 20,000 people surrounding the mine that day. A group of them even managed to enter into Cerro Verde's copper plant" (Mendoza, personal communication September 2011). "That unity between mayors and civil society created an enormous power that forced the mine to sit down and negotiate…" said one of FREDICON's main leaders (personal communication June 2010).

National State Authorities Intervene: Negotiations 2006-2007

Feeling under siege and worried about the security of their business, the mine decided to contact national political authorities. Alan Garcia, from the political party Alianza Popular Revolucionaria America (Popular Alliance for a Revolutionary America, APRA) had just won presidential elections and his government would soon take office. Jorge Del Castillo a well-known APRA congressional leader who was also president of the Pro-Investment Committee in Congress was expected to become Peru's future Prime Minister[27]. In June 2006, and after informal conversations with Arequipa's political leaders and mine officials, Jorge Del Castillo convened Congressional meetings with all social actors involved in the conflict (Mendoza, personal communication September 2011). "We didn't reach any conclusion on those two Congress meetings," remembers COFREN's President (Mendoza, personal communication September 2011). Negotiations with the mine were difficult since the only thing local and regional authorities wanted from SMCV were the 13 million nuevos soles from the Mining Canon that were used for the expansion project.

> Apart from the attempts to [receive] full payment of the income tax (canon) and royalties that mayors with our support are asking for, we inform you that our point is entirely ecological and it is not subject to the [mining] canon solution, nor to royalties, we simply want the Mining Corporation to comply with respecting the environment and mitigating their contamination and that is what we struggle for.(Letter from

27 In Peru, the Prime Minister is also the President of Council of Ministers. He is named by Peru's President.

FREDICON-COFREN addressed to Minister of Mines and Energy, Nro.1027-FREDICON-COFREN-2006, June 23, 2006)

In contrast and as shown in the previous quote, political and civil society had a much broader view about the role Cerro Verde should play in Arequipa's development. "We were fighting for one million trees, for an ecological pact, for social responsibility and the Framework Agreement" (Santiago, personal communication June 2010).

On August 2006, a third meeting was planned this time at the office of the Presidency of Ministers' Board with Del Castillo as Prime Minister. On this occasion, the meeting included key figures such as the Minister of Energy and Mines, Peru's second Vice-President, Congressional leaders and Arequipa's local Mayors (Mendoza, personal communication September 2011). After many hours of negotiation, Arequipa's political authorities, leaders of social organizations, and mine representatives reached a deal. Not only did the mining company agree to return the 13 million soles from the Mining Canon to Arequipa's regional and local governments, but after much insistence from social leaders they agreed to participate in a public-private water infrastructure project and work on the elaboration of a "General Agreement" with the people of Arequipa. The water infrastructure project consisted of the construction of two water treatment plants, one for drinking water and one for wastewater financed equally by Peru's state governments (national, regional, and local) and the Cerro Verde mine. The provision of safe and clean water became the social organizations' central demand.

> There was water deficiency in many parts of Arequipa. Not only was water contaminated but it was lacking in the homes of many of Arequipa's most marginalized populations. In compensation for the mine's contamination we wanted the mining company to work on decontaminating the Chili River and water provision for the North Cone. The North Cone after much struggle completed a pipeline system and water reservoirs. (Mendoza, personal communication September 2011)

The agreement signed on August 2006 stipulated that local and regional governments would pay 50% of the total cost of the two water treatment plants with money from the Mining Canon. A strict timetable was formulated for local and state institutions to deposit 10% of Mining Canon monies (Mendoza, personal communication September 2011). Mayors had to approve these agreements with their Municipal Boards, but failed to do so.

Meanwhile the newly elected President, Alan Garcia, called large mining companies to the table in order to negotiate new mining economic contributions in times of high profits. By the beginning of 2007, the government and large mining companies (including Cerro Verde) reached an understanding: instead of creating a new surplus earnings tax, mining companies would contribute voluntarily to social programs and local development. However, this proposal referred to as the mining "voluntary contribution" had severe consequences for the agreement reached between central government, Cerro Verde mine, and Arequipa's social and political forces. Arequipa's Comité de Lucha insisted on signing a Framework Agreement with the mine, which favored a compulsory 10% profit

contribution for a social fund that would be managed by a multi-stakeholder committee comprised by the mine, state, and civil society representatives. Instead, the "voluntary contribution" proposed by Alan Garcia's government and accepted by the mining industry meant each mining company would deposit voluntarily and only if profits were high enough, a maximum of 3.75% of their profits into a account created specially for this program or into an independent account managed by the mine's foundation or civil association.

While negotiations for the voluntary contribution program continued, in Arequipa the August 2006 agreement was brought to a standstill (Mendoza, personal communication September 2011). In 2007, the newly elected Provincial Mayor, Simon Balbuena decided to resign from the Comité de Lucha and instead communicate directly with the mine. Feeling betrayed by Balbuena, the remaining social organizations in the Comité de Lucha asked Arequipa's Regional President to take the Committee's Presidency (Mendoza, personal communication September 2011). Juan Manuel Guillen accepted the position, but many social leaders believe he made this decision as a political calculation in order to obtain some economic benefits (fieldwork 2011). Based on evidence from field conversations and FREDICON's communiqués, Guillen did not commit fully to the Committee's leadership. His apathy in calling for meetings is an example of his lack of commitment.

In light of this apparent halt in implementing the agreement, social organizations protested and threatened to mobilize. Newly elected regional and local authorities were not as committed as previous authorities were to fighting

for a Framework Agreement with the mine; some of them initiated a more direct relationship with mining officers. For example, Arequipa's Regional President from 2003-2006, Daniel Vera Ballon, signed off on many agreements with SMCV for the construction of public works. One such infrastructure project was the construction of a small water treatment plant in the North Cone, made without the approval of SEDAPAR.

> It is well known and it has been proved that Mr. Daniel Vera Ballon has received materials and pipelines [from SMCV] for the construction of a mini-water treatment anti-technical plant that totally disrupts the comprehensive potable water system project approved by SEDAPAR and distorts the technical work we [housing associations and FREDICON] do little by little. (Proposals for a Dialogue Table between COFREN-FREDICON and SMCV)

Beginning in 2007, FREDICON continued to demand the implementation of the framework agreement, but in addition to this worked on re-organizing and strengthening social organizations' stance in the conflict. They asked social organizations to unite forces to make up a "larger social contingent in order to impede the mining corporation from threatening against the life and health of Arequipeños and future generations" (Nro.91-COFREN-FREDICON-2007). They also acknowledged their "limitations in face of the Mining Corporation's political and economic power, they [Mining Corporation] did not have scruples in spending indiscriminately on propaganda and on breaking consciences" (Nro. 91-COFREN-FREDICON-2007). This was a very important in moment of the social

movement, since FREDICON and COFREN decisively made the call for all social organizations to unite forces and form a "Grand Movement against Cerro Verde Mining Corporation's environmental contamination" (Nro. 91-COFREN-FREDICON-2007).

The Comité de Lucha formed a Technical Committee that composed a document entitled "Mining Corporation Cerro Verde and Social Responsibility for Arequipa" (FREDICON, 2007). They proposed three demands. First, the constitution of a Regional Environmental Monitoring and Surveillance Commission that would make sure environmental contamination was mitigated and environmental laws respected. Second, they asked the central government to enforce the "Framework Agreement" which would require SMCV to contribute 10% of their profits (in addition to other legal contributions) for Arequipa's development. They particularly mentioned the necessity of reserving an additional cubic meter of water for human consumption and another one for agriculture. And third, they demanded Cerro Verde build two water treatment plants, a potable treatment plant and a wastewater treatment plant in compensation of accumulated contamination.

On May 4, 2007, FREDICON found out about the "voluntary contribution" agreement signed on January 2007 between MEM and SMCV. Signed under the "Mining Program in Solidarity with the People," the "voluntary contribution" stipulated that only when mining profits were high enough, a maximum of 3.75% of the profits would be deposited into a fund managed by the mine's foundation or civil association. Not only did it take them by surprise but

they considered it “traitorous and unjust” to find out that the construction of the potable treatment plant and studies of the two treatment plants were considered part of SMCV’s voluntary contribution to this fund (Letter from FREDICON to Arequipa’s Provincial Mayor Simon Balbuena, Nro.567-FREDICON-2007, May 4, 2007). “National government passed the hat to SMCV and once again betrayed the people of Arequipa” said one of FREDICON’s leaders referring to this event (personal communication August 2011).

Once again, national state authorities allied with the mining corporation, betraying the people of Arequipa. It is important to note here that the national government frequently negotiated agreements or understandings with mining corporations behind the backs of regional and local state authorities. Shielded and backed by this new agreement reached with Alan Garcia’s government, Cerro Verde made clear “they were willing to make [only] voluntary contributions to a Framework Agreement for Arequipa’s Region” (Letter from SMCV to Juan Manuel Guillen, Regional President and President of the Comite de Lucha, smcv/RR.PP&RR.CC.459/07, emphasis added).

A new meeting between the Cerro Verde mine, the Comité de Lucha and Peru’s state authorities was called for on May 17, 2007 in Arequipa’s Provincial Municipality. On this occasion, Prime Minister Del Castillo proposed to change some of the stipulations reached in the 2006 agreement. Arguing that financial difficulties on the part of local Municipalities prevented them from depositing money for water plants, Del Castillo proposed that the mining company directly finance the entire cost of the potable water treatment plant for Arequipa and the

hydraulic studies needed for both water plants. In addition, the state (national, regional and local) would finance the entire cost of the wastewater treatment plant. Leaders from the North Cone argued for a future need for another wastewater treatment plant solely for the North Cone area. These modifications were signed as an addendum to the 2006 agreement (Mendoza, personal communication September 2011).

From 2006 until 2010, the year the construction of the potable water treatment plant began, stories of betrayal and collusion were common. The process of finding a solution to the conflict with the mining corporation was tainted with continuous political negotiations in which one never knew where discussion would lead. Legality was constantly negotiated. Any agreements reached, whether it was between many or two parties were always flexible and negotiable. One-on-one negotiations between actors were common and used as bartering mechanisms in order to gain control, maximize benefits, and dismiss multi-party agreements. In addition to this, when analyzing the intricacies of conflict negotiation, one cannot help but notice the important role money, in the form of "apoyos[28]" played in solving claims. Tracing the recipients, the quantity, and transparency of these monetary enticements was difficult. Throughout discussion with social leaders, regional and local state officers, as well as civil association representatives during my fieldwork, it became obvious that a web of relations evolved around the loyalties and dependence tied to these "apoyos." One farmer from the regulated Chili basin user's board put it this way:

28 Word in Spanish literally meaning "support" or "help" but used also to refer to "monetary supports"

> It is like cultivating an interested friendship, if I want a favor from an authority I invite him for lunch, I invite him for a trip, I invite him to my house, I give him a present for his birthday. That way I'm cultivating an interested friendship. So, that when I'm in need, then I can say: "Hey doctor, I have this problem". I don't need to tell him I need help. It is a subconscious thing; it is logic he is going to react. It does not matter how impartial he is. How is he going to react if his friend, the one who invited him tells him about a problem? What could his reaction be? A subjectively favorable reaction to the person… All visits [to the mine], all gifts are conditioned. (local farmer, personal communication, August 2011)

Even though there were no public discussions on the matter, when talking with people in Arequipa it was evident that everyone knew about these "apoyos." Moreover, they knew "apoyos" were part of politics "National politics as well as international politics are based on conditioned gifts," said a local farmer (personal communication, August 2011). Leaders of housing associations in the North Cone specifically talked about these "apoyos" as one of the main points they wanted to discuss with the mine:

> We know the mining corporation is helping [apoya] different institutions with trainings and sponsorships, among other supports [apoyos]. We congratulate this; however in the North Cone there are more than 150,000 people who in practice represent 25% of the city's population. We are in extreme poverty, youth are unemployed. The mining corporation should commit to organizing training programs for those [youth] interested in

incorporating into the productive field or small businesses. (Proposals for a Dialogue Table between COFREN-FREDICON and SMCV)

Another aspect worth noting is the role national government played in enacting neoliberal policies that accentuated confrontations between national, regional, and local governments and fueled mining corporations' involvement in local welfare. An example of these policies is Law 1640/2007-PE, passed during negotiations with Cerro Verde. This law declared execution of mining investment projects of public interest. This type of law institutionalized channels favoring mining extraction activities, which in turn had direct consequences on land, water, and local development policies. By declaring mining projects as a national interest, bureaucratic processes such as water licenses, environmental permits, and land acquisitions processes were streamlined. Therefore, in the case in which regional and local governments had a dispute with a mining project, they would be ordered by law to streamline the process of project approval.

As an example of how confrontations between the different scales of state governments were produced, I refer to the role played by Prime Minister Del Castillo representing national government. Approached by the mine and Arequipa's state authorities, Del Castillo was invited to mediate the conflict. Even though his involvement provided visibility and put the conflict within the radar of hegemonic power in the city of Lima, it nevertheless framed negotiations to politics in Lima. National state politics takes place in the centralized city of Lima. It is in Lima where the main axes of Peru's hegemonic power have seats, including law firms, international organizations, transnational corporations,

financial institutions, and main state institutions. Not only is state power centralized in Lima but it is also woven more directly with global systems of economic and political power, a web of connections more familiar to a transnational corporation like Freeport McMoran, than to Andean migrants in the North Cone or local politicians in Arequipa. Throughout his involvement in the negotiations, Del Castillo's position was questioned often by Arequipa's media sources such as the *La Republica* newspaper, which saw him as "defending the Mining Corporation" (Retamozo, 2009). But not only were Del Castillo's intentions questioned by regional media sources, but more importantly his power was challenged by regional and local state institutions, like SEDAPAR, who sometimes defied his mandates (*El Comercio*, 2008).

Conclusion

At the end the figure shown by the seminar speaker at ASU did teach me something about power struggles in Arequipa. It taught me that the people of Arequipa see themselves as courageous fighters and that the struggle towards what they believed was "Right" or "Just" was full of contradictions and resistance. As I uncovered the story of how the conflict between political society, state authorities, and the Mining Corporation was resolved, I discovered minute contradictions in power relations and in the alliances formed among subalterns, the Peruvian state and Cerro Verde Mining Corporation (Mallon, 1994). This chapter weaves together arguments found in previous chapters with the story of how the mining conflict was resolved in order to unveil how water injustice was

experienced in the city of Arequipa. I point towards at least three forms of water injustice.

Injustice took the form of people subordinated in terms of class and race without access to clean, safe, and affordable water. I analyzed this type of injustice through a state-society-nature relations lens that incorporated political ecology and subaltern studies. Due to state's coloniality of power (Quijano, 2000a; 2000b) political society was forced to interact with the mining corporation as a possible channel to attain a decent livelihood in the city. Facing constant betrayals, political society took on a practical negotiating position in order to maximize benefits.

Water injustice manifested itself as hegemonic meanings and practice of water rights suppressing other meanings and practices of water rights. My approach to understanding water rights is based on a plurilegal approach in which water rights are at the same time a means of organizing, contesting and adjudication power (Mitchell, 2003). In the case of Arequipa, we find these different meanings and practices of water rights were in constant contestation. As the mining corporation became more involved in Arequipa's water governance by financing dams, water treatment plants, and sewer pipeline systems their economic view of water started acquiring more leverage.

The structural system of policies and regulations that prioritized an economic development model based on the extractive industries were conducive of water injustices. On the one hand, this extractive industry normative framework impacted directly land, water and zoning policies. On the other hand,

it accentuated confrontation between national, regional and local governments and fueled mining corporation's involvement in local and regional welfare development. This research illustrates how mining corporations took the role of national governments and installed themselves as the local (and even sometimes regional) governing body.

CHAPTER SIX

CONCLUSION

This research has presented a critical analysis of water conflict in the city of Arequipa, Peru. In 2006, the Comité de Lucha, an alliance between civil and political society organizations and Arequipa's regional and local authorities, organized a large social demonstration against the Cerro Verde copper mine. From 2006 to 2012, the conflict evolved from confrontations to a series of negotiations in which the mining corporation Cerro Verde agreed to finance the construction of a potable water treatment plant and more recently a wastewater treatment plant for the city of Arequipa through a public-private partnership. This research has taken the story of the conflict to open a window and allow the mapping of the intersections between power in nature-society relations, the politics of scale in water governance, and the plurilegal understanding of water rights. By grounding this research in qualitative methodologies, an inductive and deductive analysis, and an interdisciplinary theoretical approach this research has provided the backdrop for unveiling water injustices in the city of Arequipa.

Urban water disputes narrated in this manuscript took place in a context in which development policies were led by the economic and political influence of extractive-industries—specifically mining. Disputes regarding the use, control, and meaning of water as a hybrid nature, occurred regularly for different reasons and among different social actors. This research unpacked water disputes among three main social actors: political society, state government, and the transnational corporate owner of the local Cerro Verde copper mine. These three actors were of

crucial importance for understanding the contradictions and polarizations of discourses and practices of water in Arequipa. For the sake of analysis I juxtaposed political society (Chapter Three) and the transnational mining corporation's (Chapter Four) discourses and practices of water and understanding of water rights in order to map power relations and different patterns of water use and scales of governance. In the following three sections, I return to my research questions noted in Chapter One and review the main findings of my research. I organize my findings through topics central to my research: state-society relations and the politics of governance, water rights and hybrid nature, and water justice. Then, I comment on my research's contributions, and finally on ideas for future research.

State-society relations and politics of scale of water governance. State-society power relations in the governing of water in Arequipa were immersed in very complex inter-relations between institutional and local understandings of water management and rights. With regards to the role of the state in the governing of water in Peru, literature showed how the state's role has changed from a 'state hydraulic paradigm,' to a 'hydro-Keynesian paradigm,' and more recently to a 'market environmentalism paradigm.' The current water management paradigm, based on neoliberal and market laissez-faire ideology, was characterized by the increased role of private actors in water management. The role of the state in the governing of water was diminished and a new form of governing water emerged: water governance. In the case of Arequipa, the mining corporation Cerro Verde slowly acquired a significant role in the governance of

water at the regional and urban levels. At the same time, as the role of the state in the governance of water decreased, the poor and marginalized were left to negotiate with private actors such as a transnational mining corporation. I argue that the transnational corporate mining firm, FCX, as majority shareholder of Cerro Verde mine, was very involved in the decisions making process, the framing of the problems, and the solutions Cerro Verde came up with at the local level.

At the local level, urban squatters, many of them Andean migrants, struggled for access to basic water services. Living on deserted mountains surrounding the city, squatters fought for water as an essential element for life in the city. As narrated in Chapter Three, the history of the process of urbanization of the North Cone was characterized by struggle, contestation, and negotiations. The Defense and Integration Front of the North Cone, FREDICON (Frente de Defensa e Integracion del Cono Norte) as one of the oldest squatter associations, constantly fought for their right to the city. In this regard, urban squatters interacted with Peru's post-colonial state at the national, regional and local level, in an ambiguous and contradictory way. On the one hand, members of FREDICON acted as a population in need of social welfare and they were treated by those who govern in a paternalistic, instrumental, and patron-clientelistic way but not as rights-deserving citizens. Chatterjee (2004) refers to those who are tenuously rights-bearing citizens, as political society. The state viewed political society either as a population begging for "apoyos" (support) or as useful voters. In this regard, they could be described as complicit and dependent.

On the other hand, squatters disdained the state and denounced the state meant nothing to the North Cone's welfare. In reality, the public water sanitation company, SEDAPAR, not only failed to deliver its mission of providing water and sewage service in the North Cone, but I argue SEDAPAR to a large extent purposely acted indifferent to political society's demands. My research found that the state, understood as national, regional and local authorities, governed squatter populations through a residual colonial system that discriminated in terms of race, class, and gender. Peruvian sociologist, Anibal Quijano (2000) refers to this power system based on racial and classist exclusions as the coloniality of power. Through the analysis of power dynamics in the governing of water, this research identified a complex system of social exclusion based on racial and class attributes. In light of this system of exclusion, FREDICON self-organized and created their own rules, regulations, authorities, and discourses around their right to water. In this regard, they defied state power and autonomously participated in the construction of justice in the city.

At the urban scale of water governance, political society also played a crucial role in the struggle for equity in water distribution as well as for environmental and urban justice. Experiencing water deprivation, water shortages and water contamination, political society, grouped in associations such as FREDICON, organized to find solutions to their problems. In doing so, they challenged the failure of state institutions not only to provide for water services but also to defend water as a common good, and were forced to undertake direct political relations with powerful private actors such as the Cerro Verde mining

corporation. FREDICON recognized Cerro Verde mine as a key actor in the development of Arequipa's city and region, and therefore crucial for solving water, socio-economic and environmental problems.

Private actors, such as the Cerro Verde mining corporation, acquired more power in the governance of water at a wide range of scales. As Peru's state scaled back on its welfare and administrative role, mining corporations strengthened their role as key actors in the governance of development and natural resources. Since the early 1990s Peru's state had structurally reformed key economic and public sectors following the credo of market liberalization and the downsizing state's control over productive areas and restricting public expenditures. These reforms and subsequent policies laid the basis for a new state-society relationship based on a neoliberal extractive development model. The General Mining Law (1992), for example, privatized the mining industry and was designed to promote foreign direct investment. Another example of private actors being welcomed in management of natural resources was the case of water sector. For the past twenty years, legislators and numerous state governments worked on a water reform law. After much debate and many disputes, in 2009, the new Water Resource Law was passed. Although this new law established water as state-owned strategic resource, it nevertheless promoted private investment in the water sector.

Water governance in Peru incorporated the international discourse that the watershed scale is the "best" unit of governance in the recent Water Resource Law. This research illustrates, as Budds and Hinojosa (2012) argue, that in reality there are diverse practices over space and time that do not neatly coincide with

either the administrative structure or the river basin scale. Such is the case of the Multisectoral Committee, an informal water governance space that governed parallel to the legally recognized Watershed Council. Another example of the co-existence of different governance scales of water was the fact that the Cerro Verde mine governed water within a larger boundary, which included the possibility of acquiring from inter-basins transfers and the use of treated water (Budds & Hinojosa, 2012). The politics and scale of water governance for the mining corporation extended beyond the state's administrative structure or natural watershed boundaries. Transnational mining corporations viewed water in a global context in which state and bio-physical boundaries disappeared.

Water rights and hybrid nature. Mapping water rights in the basin, I uncovered a plurality of understandings of water-society-nature power relations. This research points to the idea that not only the governing of water was contested, but so was the meaning of water justice. By describing different views of water rights, we become aware of water's hybrid nature in that water's materiality, social and discursive imaginaries reflect the material and cultural processes through which water was constructed in particular ways (Budds & Hinojosa, 2012; Swyngedouw, 2004). Below I have focused on detailing the meaning of water right for this research's three main actors: Peru's state, political society, and the Cerro Verde mining corporation.

Table 5

Water Rights: Peruvian State, Urban Squatter Population, Cerro Verde mine

Water Rights Echelons	**Peruvian State**	**Urban Squatter Population (Political Society)**	**Cerro Verde Mine**
Resources	Nation-State ownership	Public Good	Economic Good
Norms	State determines access and use of water in order of precedence	Interlegality SEDAPAR and Housing Associations	Interlegality among State and Global Market
Authority	National Water Authority (ANA), AAA y ALA	SEDAPAR, SUNASS, Water Committees	ANA, AAA, ALA Mines and Energy Ministry
Discourses	Sustainable Development, Strategic Resource	Possible place to live, State's obligation	Economic Resource, CSR

Political society in Arequipa viewed water as life and as imperative for the urban process of settling and building a home in the city. The desert landscape and water scarce geography of the largest and most organized areas of squatter settlements, the North Cone, made urban squatters' claims for water an urgent necessity. In this regard, political society understood their right to water not under a liberal conception of individual rights vis-à-vis state power, but instead as the state's obligation to provide water for collective housing associations. In addition to this, water was understood as a basic necessity, indispensable for life; this is a necessity they fought for despite the state's unwillingness or incapability of providing. When looking at how water materiality affected political society, it is important to note that for water to flow through the North Cone's desert mountains, a complicated technological and hydraulic system of tanker trucks, water taps, water reservoirs, pipeline systems, and water valves was required. In order to put in place this complicated sewer system, a set of norms, authorities,

discourses and understandings of water were necessary. Depending on which legal or normative framework one relies on, the sewer system will be organized differently. As for now both the state legal water system and the local urban water system coexist.

For the state, water in Arequipa was framed under a national legal framework. As defined by law water is a "renewable natural resource, indispensable for life, vulnerable and strategic for sustainable development and the security of the Nation" (Law 29338). Water was regarded as a strategic resource essential for the security of the nation and life. The new Water Resource Law established the watershed or basin as the official scale of water governance. However, as my research demonstrates the state was a multifaceted creature, composed of many institutions functioning at different scales. In addition to this, not only were many times state institutions confronting one another, but more recently they were being challenged by powerful private actors. The state viewed water as a bio-physical resource that needed to be measured, described, and controlled through a series of scientific examinations and technical tools. Water rights for the state were understood as licenses and permits given to water users under the authority of the state.

For the mining corporation, the meaning and practice of water was tied directly to mineral extraction, therefore to their business. Water rights, under the logic of mining corporations, were viewed as economic assets. Since it has always been impossible to extract minerals without the use of water or without affecting water sources in one way or another, mining corporations tried to control their

'externalities' effect by use of cost/benefit and market analysis. The social and environmental implications of the mine's use and management of water were dealt with "technical," "public relations," or "social corporate responsibility" responses.

Water injustice. By grounding my analysis of power-nature relations in Arequipa through the lenses of subaltern studies, political ecology, and critical perspectives of law, urban geographies of injustice were unveiled. I focus on three forms of power-nature injustice in the city of Arequipa. First, there existed a system of racial and class exclusion, also referred as the coloniality of power (Quijano, 2000a; 2000b) by which squatter communities were denied access to water. In this regard, water injustice was manifested as social exclusion to the city. The urban poor, the majority of them Andean migrants, were excluded from the city by Arequipa's elites and state authorities. Inequity of water provision went hand in hand with a larger set of social exclusions.

Second, water injustice took place in a contested terrain in which different understandings of water rights were being fought. Power dynamics within this terrain of contestation were unequal, and there were hegemonic conceptions of water rights that subordinated others. The mining company's perspective of water rights as economic assets that were sold, bought and leased started gaining leverage. In light of this situation, urban marginal and poor populations rose to resist a merely economic understanding of water. By placing their struggle for water in the streets, by re-appropriating the meaning of legality, by defying the

power of the state and that of the mining corporation they broke from the periphery and became e decisive political actors.

And finally, I argue that structural policies and regulations that prioritized a neoliberal economic development model based on the extractive industries were conducive to water injustices. On the one hand, while focusing on inserting local dynamics into the logic of global capitalism, extractive industry's normative framework directly impacted land, water, and zoning policies. On the other hand, it accentuated confrontation between national, regional, and local governments and fueled the mining corporation's involvement in local and regional welfare development. This research illustrates how mining corporations took the role of national governments and installed themselves as the local (and even sometimes regional) governing body.

Contributions

There are three main justifications for the importance of this type of research. First, due to the importance of the extractive industry in Peru and its perceived environmental and social threats, it generates more complex forms of social conflicts and responses. By carefully studying the dynamics between extractive industry-led development and water wars, this research contributes to figuring out plausible ways to incorporate issues of social and environmental justice in public policy and legal frameworks. Second, by considering the case of Arequipa as a site to explore in detail how power-nature-society relations and issues of justice intersect, this research contributes to the literatures on state-society, political ecology, and water justice. Finally, an ethnographic case study

about the role the mining industry plays in water conflicts in an urban setting is also important and necessary because it deals with the relationships among state institutions, civil and political society, nature and transnational corporations. Understanding the different ways in which all of these systems interact with each other and are contingent to particular spatial and historical processes will render an important contribution to inter-disciplinary studies.

Recommendations for Future Research

During the course of my fieldwork I encountered some obstacles and difficulties. Some of those obstacles were related to more practical issues such as institutional or research design limitations. And other kind of obstacles were related to more substantial limitations, such as when feeling challenged by others, by social reality or nature. I propose to turn these obstacles into possibilities for the future.

On the side of practical limitations, I feel that although I was able to secure a dissertation fellowship that helped me enormously during the fieldwork and dissertation writing stages; I nevertheless feel time was a constraint. I would have liked to spend more time analyzing my fieldnotes, the transcribed conversations, FREDICON's documents, and making sense of how what I observed in Arequipa connected to written documents. With regards to my research design, I also realized that by focusing too much on what was going on at the level of the city, I ignored getting to know what was happening at the lower and upper levels of the Quilca – Chili River basin. At the scale of the city, at first my relationship with Labor opened the way for getting to know people and

organizations Labor worked close to. I was grateful for that. However, I soon realized I needed to expand my network and get to know and talk with people and organizations that were not close to Labor.

On the side of substantial limitations, I realized there were critical aspects that needed to be addressed but that were beyond the scope of my research. For example, I slowly realized the world of water was something new to me. It was the first time I was conducting research on water and I had no idea what that meant. The world of water included knowledges I was not familiar with, such as engineering, biology, physics, chemistry, and ecology. During conversations with engineers and biologists, I many times could not understand what they were saying. It was as if they were speaking a different language. And in reality they were, at least to me. Due to this constraint, I soon began learning their language, and trying to understand what they were saying. I must say this is something I am still doing. I converted my frustration into an opportunity for learning another language and knowledge.

Another important theme that rose during fieldwork, but one I had not considered in my research was related to gender and racial dynamics. Being a woman from Lima with lighter skin than many in Peru, I was not only confronted about my racial and gender attributes but in addition to this, that confrontation allowed me to start seeing how gender and racial oppression was played out throughout social relations in Arequipa. I soon realized I needed to incorporate a racial and if possible gender analysis into my work. I was able to think through state-society relations and racial systems oppressions through Anibal Quijano's

concept to the coloniality of power. I was not able, though to include a gender analysis in my work. This is yet to come, and I hope to investigate more about it in the future.

Finally, in the near future I hope to go back to Arequipa and share my findings. During fieldwork I met another doctoral student doing similar research about water but through the angle of climate change. She and I have started collaborating by talking about what we observed, about our analysis, and about our interpretations. I would like this research to have a meaning beyond the academic world, and for that I will work for.

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APPENDIX A

INSTITUTIONAL REVIEW BOARD (IRB) APPROVAL

ASU ARIZONA STATE UNIVERSITY
RESEARCH AND ECONOMIC AFFAIRS

Office of Research Integrity and Assurance

To:	Robert Bolin ANTH
for **From:**	Mark Roosa, Chair SM Soc Beh IRB
Date:	05/18/2010
Committee Action:	**Exemption Granted**
IRB Action Date:	05/18/2010
IRB Protocol #:	1005005155
Study Title:	Mining projects and the Conundrums of Development: the coproduction of water services in Arequi

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(2) .

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.